

Chapter 4 - Environmental Consequences

Only resources and resource uses that would have consequences as a result of implementing the decisions within this proposed plan are discussed.

Both adverse and beneficial consequences, based on the effects of the proposed resource condition objectives, land use allocations, and the management actions are discussed. Mitigating measures in manuals, policy statements, congressional acts, etc., designed to avoid or reduce environmental consequences are incorporated into this environmental analysis. Those identified consequences are considered unavoidable with the prescribed mitigation.

Assumptions For Analysis

An interdisciplinary approach was used in developing and analyzing environmental consequences. The following general assumptions were applied:

- Implemented actions from decisions made in each management plan alternative would be in compliance with all valid existing rights, Federal regulations, Bureau policies, etc.
- Implementation of the approved Plan at the end of this planning process would begin 30 days after the approved Plan and record of decision are signed by the BLM state director, and all implemented actions would subsequently conform to the specific approved Plan decisions.
- Impacts are considered to be direct, unless otherwise indicated.
- The discussion of impacts is based on the best available data. Knowledge of the Planning Area and professional judgement, based on observation and analysis of conditions and responses in similar areas, were used to infer environmental impacts where data is limited.
- Acreage figures and other numbers used in this analysis are approximate projections for comparison and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations.
- Changes of effects described during the life of the plan would be short term unless otherwise stated and would occur during or immediately following implementation of an action.
- Short-term impacts would occur over a 5-year period following implementation; long-term impacts would occur over a 5- to 20-year period.

Impact Topics Selected for Detailed Analysis

The major resources/topics to undergo in-depth analysis are listed below and organized by Issue sections from Chapter 2. The discussion for each resource/topic includes direct, indirect, and cumulative impacts.

1. Impacts to Air Quality

2. Impacts to Water Quality
3. Impacts to Soils
4. Impacts to Vegetation
5. Impacts to Wildlife
6. Impacts to Wilderness
7. Impacts to Livestock Grazing
8. Impacts to Wild Horses & Burros
9. Impacts to Recreation Use
10. Impacts to Motor Vehicle Access
11. Impacts to Mineral Development
12. Impacts to Cultural Values
13. Impacts to Lands and Land Use Authorization
14. Impacts to Socio-Economic Conditions

Reasonably Foreseeable Future

This section presents a scenario or assumption of constancy or changes in land and other uses and trends over the life of the plan to help guide the analysis and statement of impacts in this chapter.

Lands Actions

Little urban growth is expected in the Planning Area due to its remoteness from existing urban centers, the relatively small amount of private lands in the area, lack of infrastructure, and the relatively harsh, water-less climate. County planning departments project little, if any, significant change. Development that does occur carries a significant cost burden for infrastructure support. This development would most likely occur at existing populated centers and along freeways at exit points. Catellus Development Corporation has proposed to dispose of lands in northeast Imperial County and acquire some public lands in two other small areas, which could see some development.

Significant use of portions of the Planning Area has been made for utilities, highways, and railways crossing of the desert. Future additional lines are projected at one new major power or pipe line per established utility corridor. It is anticipated that Highway 95 between Vidal Junction and Needles (to four lanes and elevated) could be upgraded within the next 20 years. Finally, from new technologies and water conservation/demand needs there is an anticipated increase in demand for communications sites (towers and access roads) along major highways and a few groundwater storage proposals, both of which involve light development, but no permanent human presence.

Large solid waste landfills have been proposed and environmentally assessed in the Planning Area over the last several years, two of which, the Mesquite and Eagle Mountain have cleared NEPA and CEQA and could become operational in the next few years (including expansion of rail use and jobs growth). With these in place and emphasis on recycling in the region, probability of more proposals in the Planning Area is low.

Minerals

Expansion of existing and development of new gold mines has been expected to dominate the picture for many years, but recent world trends may dampen this picture. To the extent that gold continues to be mined, it will likely occur in the Chocolate Mountains-Picacho gold belt area of Imperial County. Mining here would continue to be characterized as large scale, heap-leach type operations involving disseminated gold. Known reserves are estimated to last 10 years at which time mining would dramatically taper off. The

Imperial Project, a proposed new gold mine in the area would have a nine-year life.

No other mining of metallic minerals is expected for years as nearly all known potential for them is in BLM wilderness areas.

Other minerals that could see new, continued and expanded development include:

- Limestone in the Big Maria, Palen and Chuckwalla Mountains of Riverside County for specialty and chemical products, however, adjacent wilderness issues may rule out the latter two sites.
- Gypsum in the Little Maria and Palen-McCoy Mountains for plaster, wallboard, and other products; however well developed and cheaper sources in the region and Mexico and lack of nearby manufacturing plants for the raw product may stifle development in the Planning Area.
- Wollastonite in the Big and Little Maria Mountains of Riverside County for porcelain glaze, filler, and whiting agent.
- Calcium chloride from evaporation ditches/ponds on Bristol, Cadiz, and possibly Danby Dry Lake beds at current levels of development. These operations are expected to remain at current levels
- Sodium chloride from evaporation ditches/ponds on Danby Dry Lake at current level of development. This operation is expected to remain at current levels.
- Sand and Gravel from historically used sites should continue and fluctuate with market conditions, highway resurfacing (involving new nearby borrow sites), and growth in nearby urbanizing valleys. Existing sites should meet market demand for the next 10 years, after which new sites may have to be developed.
- Nearby geothermal and oil and gas development is not expected to change and have an affect land in the Planning Area.

Recreation Actions

In general, the overall level of recreational use is currently low throughout the Planning Area except on a site-specific, seasonal basis. For instance, use in developed campgrounds and long-term visitor areas, as well as on lands adjacent to the Imperial Sand Dunes Recreation Area, is often moderate to high during the cooler months of the year. But as distances from concentrated use zones increases, there is generally a concomitant decrease in use. Regarding trends of popular recreation activities in the Planning Area, use appears to be neither significantly increasing nor diminishing. To the degree that nearby urban centers (Coachella, Colorado River, Imperial, and Palo Verde valleys) grow there could be a general increase in extensive uses in the Planning Area. However, off road use, resulting in routes proliferation, has not been an issue on public lands away from the edges of urban centers and is not anticipated to become one. Significant new use of BLM wilderness areas is not anticipated.

OHV use in the two established (1980 CDCA Plan) open areas, Rice Dunes and Ford Dry Lake will continue to be very low, or non-existent. On the other hand the demand for such use in the lower Chemehuevi Wash area is increasing. The annual Johnson Valley to Parker motorcycle race has not been run for several years, but could continue depending upon the outcome of plan decisions.

Upland game and deer hunting, largely a fall-winter local phenomenon that occurs in microphyll woodland washes, is not expected to increase.

Recreation uses are subject to cyclical fluctuations like other societal phenomena, but a few factors suggest the Sonoran Desert portion of the Planning Area could become increasingly popular with older Americans. These facts include: general increase in preference for natural, undeveloped settings, aging population base, increased affluence and comfort-desiring (for recreation vehicles), and mild and dry winters. Most of these

people will “winter” (as many do now) for half-year durations engaging in off-highway vehicle touring, hunting, primitive camping in undeveloped sites, rock-hounding, social, and other recreation activities.

Wildfires

The spread of alien plants , especially annual grasses, creates an extraordinary potential for disastrous ecological change. Historically in the Planning Area, the occurrence of wildfires is low. As we monitor the occurrence and find problems, we may advocate and implement one or more of the following measures:

- establish one or more BLM fire stations in the Planning Area to reduce the suppression response time
- establish seasonal campfire closures
- establish mechanical or chemical control of alien plants in key areas

Military Operations

The relatively small amount (less than 1%) of CMAGR that is currently impacted due to air - ground and SEAL training operations has been in place for 15 years and is not expected to change.

Joshua Tree National Park Visitation

The vast majority of visitors to JTNP focus on the western half (outside the Planning Area); change is not anticipated in the eastern half.

General Perspective

Several broad perspectives on proposed land use decisions with comparisons by alternative are contained in Appendix O with no further reference in this chapter.

4.1 No Action Alternative

4.1.1 Air Quality

From Issue 1: Standards and Guidelines

The National Fallback standards and guidelines would promote the maintenance of the processes and functions necessary to maintain and improve healthy soil and vegetation within grazing allotments which would improve air quality from reduced particulate pollutants adjacent to allotments.

Fugitive dust emissions result from wind crossing disturbed or dry unconsolidated soil surfaces. Small reductions in movement of particulate dust would result with increased vegetative cover. Emissions rates from areas outside of grazing allotments would continue at current rates.

From Issue 2: Recovery of the Desert Tortoise

The current level of management on 189,564 acres of designated ACECs has a slight positive effect on air quality through a few prescriptions designed to reduced surface disturbance (e.g., vegetation restoration, road & wash closures).

Surface disturbing projects are evaluated on a case by case basis without a limit. Potential impacts include; surface disturbance on a larger scale and little incentive to direct projects to other less sensitive areas which potentially add particulate pollutants to the environment.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Impacts to air quality from motorized vehicles primarily occur from utilization of “open” areas and general access along routes of travel. Travel in “open” area can produce particulate matter from wind-blown dust and reduces vegetation cover which leaves soils vulnerable to wind erosion. Under current management there are two open areas in the Planning Area, Ford Dry Lake OHV area (1134 acres) and Rice Valley OHV area (2790 acres).

CUMULATIVE IMPACTS

Increases in population in urban areas such as Los Angeles and San Diego generally lead to impacts to air quality from PM₁₀ and CO emissions. Although development in the Planning Area has been low historically and little urban growth is expected in the Planning Area, air quality in non-attainment areas could continue to be impacted by the exportation of “urban” smog to remote regions in the desert. Additionally, PM₁₀ may continue to be a problem in areas affected by surface disturbance from uses such as grazing, recreation and large soil disturbing projects.

4.1.2 Water Quality

From Issue 1: Standards and Guidelines

Implementing the National Fallback standards and guidelines would enhance and strengthen present management of grazing activities occurring in the Planning Area. This change in direction would contribute to minor improvement of water quality from natural sources. Results from recent rangeland health assessments of Lazy Daisy, Ford Dry Lake, and Rice Valley Allotments found that resource conditions meet the standards. The Chemehuevi Allotment did not meet the riparian/wetland standards due to an infestation of tamarisk and impacts from burros at West Well. Development of prescribed water (water troughs, pipe, and storage tanks) improvements in Lazy Daisy would enhance current conditions by improving cattle distribution.

There would be improvement in hydrologic function resulting in improved water quality. As uplands and riparian vegetation improve, peak runoff and overland flow would be reduced and increased riparian vegetation would protect and stabilize adjacent soils. There would be an increase in water infiltration through most soils and a decrease in sedimentation. There are no appreciable riparian and wetland areas in Chemehuevi, Ford Dry Lake, and Rice Valley Allotments and improvement in these areas would be negligible.

Current conditions and trends for water quality outside of allotments would continue at current levels.

From Issue 2: Recovery of the Desert Tortoise

Potential impacts to water resources can result from any activity which adversely affects water quality or availability in the NECO Planning Area. Such activities include livestock grazing, mining, vehicle use of roads and trails, burro grazing and surface disturbing land uses.

The current level of management on 189,564 acres of designated ACECs has a slight positive effect on water quality through a few prescriptions designed to improve water quality (e.g., removal of tamarisk, fencing of waters).

Grazing activities which occur on 605,453 acres impact water quality through coliform bacteria contamination. Additionally, water resources are impacted through soil compaction and the

reduction of vegetative and litter cover that reduces infiltration and increases storm water runoff and sedimentation.

From Issue 4: Wild Horses and Burros

Burro grazing activities occur on 600,00 acres within the Planning Area and may adversely impact water quality through coliform bacteria contamination. Additionally, water resources may be impacted through soil compaction and the reduction of vegetation and litter cover that reduces infiltration and increases storm water runoff and sedimentation.

CUMULATIVE IMPACTS

Implementation of the National Fallback standards and guidelines, cumulatively with the many other state and regional initiatives to protect, enhance, and maintain ecosystem health, will result in improved rangeland health. There will be less soil erosion, improved vegetative diversity, improved livestock forage, improved upland and riparian habitats, and improved water quality.

Improvements to riparian areas will result from increased vegetative cover which will result in stabilized aquatic systems, with longer flowing streams, better water quality, protection from erosion and flooding, which will better support wildlife, livestock municipal water supplies and recreations uses.

4.1.3 Soil Quality

From Issue 1: Standards and Guidelines

Current rangeland health assessment work indicates that the soil standard has been met in the four allotments. In general, implementation of that standard would result in positive impacts to upland soils and would improve overall watershed health slowly over the long-term. This improvement would be slow and the results complex. Surface litter plays a complex role in soil health. It cycles plant and animal nutrients, reduces raindrop impact, traps mobilized sediment, insulates and moderates soil temperature, conserves soil moisture, and involved in the development of soil structure. The positive changes expected to occur to soil are; reduced soil crusting, reduced erosion, increased biological activity, increased permeability, increased root mass, increased fertility, increased soil cover, and increased soil moisture.

From Issue 2: Recovery of the Desert Tortoise

Under this alternative, range improvement development is provided by the current biological opinion, AMP, CDCA Plan, and regulations. Prescribed construction would minimally affect soil with compaction and disturbance during installation of fence, springs, wells, and cattleguard. Some compaction and disturbance of soil are expected when hauling equipment, materials and personnel to work site. Impacts to soil would be minimal and recovery would occur during the short-term. Minimal impacts from compaction would occur when cattle modify current trailing new facilities and this would be slightly offset when other trail use is reduced. Cattleguards would be placed along a fence in the road resulting in negligible impacts to the surrounding soil.

From Issue 4: Wild Horse and Burros

Burro grazing, as with livestock grazing, impacts the soil resource primarily through the reduction of vegetation and litter cover which protects soils from erosional processes and, to some degree, soil compaction that channels and concentrates storm water runoff. Burros have ranges for seasonal movements that may cover an area of 600,000 acres during a year in which plant

utilization may occur within the existing Herd Management Areas which potentially impacts soil quality.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designation

Off-road vehicle use, both competitive and casual, has potential to impact the soil resource, particularly if the activity occurs within areas with highly erodible soils. Competitive off-highway events occur on the Johnson Valley to Parker and the Parker 400 race corridors. Direct impacts from events include physical destruction of vegetation which increases soil loss from water runoff, dust and soil compaction.

Impacts from general access under the multiple-use class guidelines to soil quality are largely unknown. However, impacts from new disturbances and potential soil loss would be expected as population and demand for recreation rises.

CUMULATIVE IMPACTS

Implementation of the National Fallback standards and guidelines, cumulatively with the many other state and regional initiatives to protect, enhance, and maintain ecosystem health, will result in improved rangeland health. There will be less soil erosion, improved vegetative diversity, improved livestock forage, improved upland and riparian habitats, and improved water quality.

Specifically, improvements to the soils and uplands areas will occur slowly over decades and will affect not only upland systems components such as soil, water, vegetation, and wildlife, but also downstream components such as water quality and riparian habitat. Soil conditions, primarily soil structure, influence the movement of air, water, roots, nutrients, and soil organisms. These soil conditions strongly influence plant growth, water infiltration and runoff, and erosion.

4.1.4 Vegetation Management

From Issue 1: Standards and Guidelines

General Vegetation: Vegetation within grazing allotments would be positively affected by implementation of the four National Fallback standards. Three of the four allotments meet the standards, but at West Well in the Chemehuevi Allotment the riparian/wetland standard was not met due to infestation of tamarisk and impacts from burros to West Well. Recommended prescribed actions have been proposed and authorized by management to remedy these problems.

Under this alternative, minimal improvement is expected due to the current low level of grazing use in all four allotments. Improvement would come in the form of extended period of growth for perennial forage species in response to continued achievement of the native species standard through implementation of grazing management practices. The period for plants to recover from cattle consumption is expected to increase over the long-term. There would be benefits when biomass and vigor increase for forage plants with sustained maintenance of the standard. Continued maintenance of plant vigor would result in a corresponding short-term decrease in biomass, seed production, and seedling establishment for those species not currently consumed by cattle. Plant volume for forage species is expected to increase the greatest in Sonoran Creosote Scrub and Mojave Creosote Scrub plant communities. However, the Desert Dry Wash plant community may realize the greatest increase in forage plant volume by unit area. The increase in volume would likely increase canopy cover. There would be a benefit from increased litter for those series receiving higher rainfall. Over the long-term all perennial plants adjacent to existing

range improvements would increase in volume and vigor.

Seed production and seedling establishment for forage plants would increase slightly for the short-term. Germination of perennial grass and shrubs are expected to increase in areas where viable seed is present, thereby increasing chances for potential seed production for future germination.

Significant flora expression of plant series or communities is anticipated for those communities that have not reached their potential. Benefits from an increase in vegetative diversity for all plant communities are expected. However, significant increases in diversity are expected in Sonoran and Mojave Creosote Scrub plant communities. Where communities have the potential, tree and shrub structure is expected to increase, and development of trees and shrubs for appropriate age-class distribution is expected, as well. Those species of plants and animals that seek greater plant would benefit with this change. In the long-term, plant series will reflect achievement of later seral stages of the plant community. This shift in plant communities should reflect a greater diversity of plants and animals.

Recruitment of perennial species is expected when weather permits. Removal of cattle after a favorable growing season would increase perennial grasses and shrubs. Fire frequency is not expected to change except prescribed burns utilized to increase perennial species or to improve habitat for special status species.

Construction activities that require installation of fence, troughs, pipe, storage tanks, and a corral would remove or trim vegetation in small areas, typically in or adjacent to currently denuded areas. Trimmed plants would sprout and regrowth would occur relatively quickly after construction is complete. Construction of improvements in tortoise habitat must adhere to existing direction listed in the biological opinion and Appendix C.

Trends and conditions for vegetation outside allotments would continue as currently observed.

Biological Soil Crusts: The disturbance of biological crusts by large grazing animals would affect these species. The crust's response to these disturbances varies depending on soil moisture, soil movement and compaction from the grazing animal's hooves. These allotments have been grazed for decades and continued light grazing would not produce additional changes to species diversity of the biological crust. Changes in grazing management may produce site specific impacts to biological crusts. When impacted sites are identified appropriate management action would be taken to maintain these sites. Trends and conditions for biological crusts outside allotments would continue as currently observed.

Riparian/Wetland: Riparian areas at certain spring sources within Lazy Daisy and Chemehuvi Allotments would quickly improve after treatment with prescribed actions. Conditions for all riparian/wetland areas are expected to improve over the long-term with continuous rangeland health assessments. There would be a significant increase in riparian plant species and would benefit riparian obligate plant and animal species with a reduction in occurrence of tamarisk in riparian/wetland areas. There would an increase in structure from trees and shrubs in the riparian zone. The width and length of the riparian zone following the area of moisture would increase. The plant and animal community would benefit from changes in composition of vegetative cover from herbaceous plants, shrubs, and trees. The number of age-classes for plants will increase over the long-term. As plant conditions improve, the diversity of plants and animals would increase.

There would be a slow reduction in non-riparian species in the potential wet zone. Short-term construction related activities for water developments or fence construction for protection of riparian vegetation would temporarily disturb or remove riparian and adjacent upland vegetation. This activity is not expected to significantly affect plant communities due to the relative abundance of soil moisture.

Trends and conditions for riparian/wetland outside allotments would continue as currently observed.

Noxious Weeds: There would be a substantial decrease in specific noxious weeds that respond to management techniques. Tamarisk would be reduced in riparian and wetland areas throughout the Planning Area. Reduction of noxious weeds by increased competition from native plants would move plant series to later seral stages. As native plant species increase, plant and animal species diversity would increase and disturbed areas would decrease reducing potential weed establishment.

Short-term construction related activities for range improvements would increase soil disturbance and may increase noxious weeds at or near the disturbance. Trends and conditions for noxious weeds outside allotments would continue as currently observed.

From Issue 2: Recovery of the Desert Tortoise

Natural Communities

The existing planning environment provides a relatively high level of protection of natural communities. This results from the presence of one large National Park (JTNP) that is almost entirely designated wilderness, one large military base (CMAGR) with use restricted to a few relatively small target areas (<1% of CMAGR), and designated BLM wilderness areas (Fig. 2-4). JTNP and wilderness areas are managed specifically for natural values; disturbance of natural communities in these areas is slight. Table 4-1 shows the acres and percent of each natural community type within these areas. The following figures from the table are notable: 1) very little (4%) Desert Chenopod Scrub is in these protected areas; 2) a high proportion (102 of 140=73%) of Springs and Seeps are in these areas; 3) all Mojave Pinyon and Juniper Woodland is in these areas; and 4) no Playas are in these areas.

Table 4-1. Acres and percent of total of each natural community within JTNP, CMAGR, and BLM wilderness.

Natural Community	JTNP	CMAGR	BLM Wilderness
Sonoran Desert Scrub	408,506 (11)	323,910 (9)	1,086,547 (29)
Mojave Desert Scrub	25,273 (3)		403,619 (50)
Desert Dry Wash Woodland	52,265 (8)	132,792 (20)	77,933 (12)
Mojave Pinyon/Juniper Woodland			1,928 (100)
Desert Chenopod Scrub	76 (4)		
Springs and Seeps (no. of sites)	21 (15)	11 (8)	70 (50)
Sand Dunes	3,110 (5)		16,010 (26)

Most of the impacts to natural communities occur on private lands or on BLM non-wilderness lands. Impacts on the latter generally result from authorized activities under BLM's multiple-use mandate. Table 4-2 shows the acres and percent of each natural community within each MUC (designated wilderness is included under MUC C in the table). The following numbers from the table are notable: 1) 32 percent of Desert Chenopod Scrub is in MUC I even though it is a very rare community; 2) 64 percent of Playas is in MUC I; 3) no Desert Dry Wash Woodland and only a very small proportion of Sand Dunes (3%) are in MUC I; and 4) only one Springs and Seeps site is in MUC I.

Table 4-2. Acres and percent of total of each natural community within each BLM Multiple-Use Class: Controlled (C), including designated BLM wilderness; Limited (L); Moderate (M); and Intensive (I).

Natural Community	MUC C	MUC L	MUC M	MUC I
Sonoran Desert Scrub	1,102,310 (30)	997,962 (26)	918,388 (24)	20,045 (<1)
Mojave Desert Scrub	404,303 (51)	196,703 (24)	174,889 (22)	3,200 (<1)
Desert Dry Wash Woodland	79,462 (13)	177,471 (26)	219,833 (32)	
Mojave Pinyon/Juniper Woodland	1,928 (100)			
Desert Chenopod Scrub		677 (33)	670 (32)	655 (32)
Playas		2,692 (3)	28,689 (33)	56,683 (64)
Springs and Seeps (no. of sites)	70 (50)	31 (22)	5 (4)	1 (1)
Sand Dunes	16,059 (26)	7,246 (12)	33,940 (55)	1,766 (3)
All BLM lands in NECO	1,604,062 (**)	1,384,205 (25)	1,389,491 (25)	83,463 (2)

Impacts to large portions of the Playa community at the Ford Dry Lake and Sand Dunes community in the Rice Valley open areas are potentially significant. However, historically, OHV use has been very low at both sites and the impacts have been insignificant.

Impacts from the two cattle grazing allotments and two sheep allotments include: competition with native wildlife for forage (Heske and Campbell 1991), disruption of sensitive natural communities (especially Springs and Seeps), reduction in annual plant diversity (Waser and Price 1981), and compaction of soils. The last two effects are most severe in the vicinity of springs, water troughs, corrals and salt licks used by cattle (e.g., Sunflower Spring). The effects of grazing on ecosystems in arid lands are reviewed by Archer and Smeins (1991).

Table 4-3 shows the acres and percent of natural communities within the four livestock grazing allotments on BLM (and interspersed private) lands. All of the allotments include only a small portion of several natural communities except for the following: 1) Lazy Daisy Cattle Allotment includes all (100%) of the Mojave Pinyon and Juniper Woodland, 26 percent of Mojave Desert Scrub, and 11 percent of the Springs and Seeps; 2) Rice Valley Sheep Allotment includes 17 percent of the Sand Dunes; and 3) Ford Dry Lake Sheep Allotment includes another 8 percent of the Sand Dunes.

Table 4-3. Acres and percent of total of each natural community within BLM grazing allotments: Lazy Daisy Cattle, Chemehuevi Cattle, Rice Valley Sheep, and Ford Dry Lake Sheep.

Natural Community	Lazy Daisy Cattle	Chemehuevi Cattle	Rice Valley Sheep	Ford Dry Lake Sheep
Sonoran Desert Scrub	118,005 (3)	129,415 (3)	57,509 (2)	33,845 (1)
Mojave Desert Scrub	207,450 (26)			
Desert Dry Wash Woodland	5,462 (1)	6,317 (1)	17,389 (3)	5,355 (1)
Mojave Pinyon/Juniper Woodland	1,928 (100)			
Desert Chenopod Scrub				216 (10)
Playas				5,269 (6)
Springs and Seeps (no. of sites)	16 (11)			
Sand Dunes			10,667 (17)	4,996 (8)
All NECO lands	332,886 (6)	137,321 (2)	85,565 (2)	49,681 (1)

Other widely disseminated activities that result in low level or localized effects on natural communities include camping, long-term visitor (camping) areas, and communication sites. Various recreational activities, such as hunting, target shooting, rockhounding, birdwatching, and rockclimbing can disturb wildlife, but have little overall effect on natural communities. Harvesting of plant parts for the dried-plant floral industry can slightly reduce plant volume in a local area, but the overall extent has been very small. The major effect of these activities is from vehicle use on roads and in washes.

The total area of all targets within CMAGR is 2,812 acres, <1% of the Range. Potential impacts within the targets include: vegetation removal from bombing, flares, and other use of targets; potential fires; and light use of roads. There is an extensive network of air corridors over the Planning Area; this could result in minor disturbance to wildlife where flights are low (Weisenberger *et al.* 1996).

Ecosystem Processes

Changes to ecosystem processes that greatly affect natural communities and vegetation include construction of roads, highways, railroads, aqueducts, agriculture, urban development, fencing, and large projects. These barriers restrict movements of animals and can disrupt gene flow of both animals and plants.

Special Status Plants

Similar to the natural communities, the existing planning environment provides a relatively high

level of conservation for many special status plants. Table N-1 Appendix N shows the acres and percent of the potential range (number of sites for some species) of each special status plant within these JTNP, CMAGR, and BLM wilderness, management entities with a high level of surface protection and a very low level of use. The table shows that 24 of the 32 special status plants occur in one or more of these areas. For 5 of the 32 (red grama, saguaro, crown-of-thorns, Robison's monardella, and Munz' cholla), more than 80 percent of the range is in these areas. For 12 of the 32 (the previous plus Los Animas colubrina, California ditaxis, spearleaf, Arizona pholistoma, Orocopia sage, Coues' cassia, and Mecca-aster), more than 50 percent of the range is in these areas. And for 20 of the 32, more than 30 percent is in these areas. Only 8 of the 32 plants species do not occur in these areas.

Coachella Valley milkvetch, the only federally listed plant in the NECO Planning Area, is found at one site in JTNP and two sites BLM-administered lands, in MUC L (Map 3-7b Appendix A). These sites are protected by policies that listed plants and their habitat, to the extent known, will be avoided by projects. At a minimum, mitigation measures would be developed in coordination with USFWS and approved by them through formal consultation under Section 7 of the Endangered Species Act. The two BLM sites are not in a utility corridor, not in a livestock grazing allotment, and not in a burro HMA. Off-road travel by vehicles could effect any of the three populations.

Most impacts to special status plants occur on private lands or on BLM non-wilderness lands. Impacts on the latter generally result from authorized activities under BLM's multiple-use mandate. Table N-2 Appendix N shows the acres and percent of each special status plant within each BLM MUC. Class C includes designated wilderness. A considerable portion of the range of some special status plants is in Class C and wilderness; this has been addressed immediately above.

It is significant that 19 percent of the range of angel trumpet, 28 percent of Harwood's rattleweed, and 100 percent of the sites for giant Spanish needle are on Unclassified lands. These lands are planned for disposal into private ownership; development would presumably follow such a transfer.

Table N-3 Appendix N shows the acres and percent of the range (number of sites for some species) of each special status plants within the four livestock grazing allotments on BLM (and interspersed private) lands. The most significant are crucifixion thorn with 61 percent of its range in the two cattle allotments (not eaten by cattle), lobed ground-cherry with 41 percent of its range in the Lazy Daisy Cattle Allotment, glandular ditaxis with 21 percent of its range in the Chemehuevi Cattle Allotment, foxtail cactus with 14 percent of its range in all four grazing allotments, and desert unicorn plant with 10 percent of its range in all four allotments. The reminder of plants wither do not occur or have less than 2 percent occurrence in grazing allotments.

Both sheep and cattle can eat special status species. Of the 5 special status plants listed above, crucifixion thorn and foxtail cactus are not eaten by livestock, but the other three might be eaten (Jessica Walker, Botanist, BLM, pers. comm.). Livestock can also trample special status plants. They can damage habitat by compacting soils, reducing cryptogamic crusts (Brotherson *et al.* 1983), reducing annual plant diversity (Waser and Price 1981), and altering other soil water and chemical characteristics; these impacts can lead to elimination of sensitive plant species (Kleiner and Harper 1977). The greatest effects of trampling and soil compaction occur at water troughs,

corrals, and salt licks. All but the Lazy Daisy Allotment receive very low, infrequent use, as described earlier.

From Issue 4: Wild Horse and Burros

Vegetative plant communities vary throughout the HMAs which burros utilize for forage and cover. Key forage areas are typically located near water sources where herds would congregate, especially during the dry season. If populations are maintained at appropriate levels in these areas, more than adequate forage is expected to exist for that population level throughout the remainder of the HMA. Monitoring utilization levels determine if the level of use is within the proper use factor for that key species. If the utilization levels exceed the proper use factor, the plant species are considered to be adversely affected. Areas which have overlapping use by grazing ungulates are most susceptible to overgrazing. Various degrees of foraging behavior by burros on shrubs can be seen. Two examples are bark stripping of ocotillo (*Fouquieria splendens*) and a well developed browse line on palo verde (*Cercidium sp.*). Although these impacts to these plant species are not detrimental to their existence, they do act as indicators as to the level of activity occurring in the area.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

The low-level, dispersed recreation use in the Planning Area results has a relatively low impact to habitats and rare plant species. Table N-4 Appendix N shows the average number of miles of roads per square mile in each natural community type. The total for all of NECO is .61 miles per section (or 22 miles per township). These figures represent an 18% reduction in the miles of "open" routes, which includes closures created by the CDPA and proposed in NECO (see section 2.5). Even without the NECO proposals the numbers are small due to historical low use and large areas dedicated to low impact uses.

In spite of the above analysis roads, by their very nature, have low vegetative cover and compacted soils. Although the size of the disturbed area may not be significant in itself, there are a variety of other effects of vehicle use that add to the significance. Among these are the following:

- Introduction and spread of exotic plants;
- Alterations in surface water flow and percolation, especially where the roadbed is not at grade level (the overall effect may be to increase overall plant height, plant biomass, and foliage arthropods through "water harvesting" adjacent to compacted roadbeds [Johnson *et al.* 1975, Vasek *et al.* 1975b]);
- Loss of native vegetation due to associated camping along routes;

Table 4-4 does not include washes in areas where navigable washes may be driven. Use of washes has similar effects to roads but also may result in loss of native vegetation in the wash or in adjacent areas as drivers leave the wash or "search" for alternate washes. Navigable washes have not been identified and, hence, the quantity is difficult to assess. However, driving in washes occurs mostly in Desert Dry Wash Woodland, which has a relatively high animal species richness. Most of the driving in washes occurs in the southern half of the Planning Area in November through April.

Table 4-4. Average number of miles of road (not including navigable washes) per square mile in each natural community.

Natural Community	mi. of road/mi ²
Sonoran Desert Scrub	.566
Mojave Desert Scrub	.610
Desert Dry Wash Woodland	.888
Mojave Pinyon/Juniper Woodland	0
Desert Chenopod Scrub	2.121
Playas	.357
Springs and Seeps	N/A
Sand Dunes	.197
All NECO lands	.611

Impacts to large portion of the Playa community at the Ford Dry Lake and Sand Dunes community in the Rice Valley open areas are potentially significant. Historically, OHV use has been low at both sites and the impacts have been insignificant.

There are few recreation centers and campgrounds in or near the Planning Area to support recreation. Long-term winter visitors have been encouraged to congregate in local towns or camp in one of three long-term visitor areas (LTVAs). This has considerably reduced the incidence of random, dispersed camping which could have the potential to impact hundreds of acres of vegetation over a long period through crushing and disposal of wastes. The reduction of impacts from dispersed camping is off-set by the amount of area devoted to the LTVAs: 3066 acres for Midland and Mule Mountain LTVAs which are in or near proposed DWMA's.

The Johnson Valley to Parker and Parker 400 routes would remain designated for competitive racing - i.e., high speed, competitive off-road vehicle events and accompanying spectator uses at pits and finish areas. This activity, while confined to traditional route alignments and areas - and in spite of design and stipulations - does result in soil compaction and erosion, widening of existing roads and trails, creation of new roads and trails, and increased direct mortality and harassment of wildlife. In spite of land use decision in all likelihood the Parker 400 is no longer viable due to certainty of a finding of jeopardy opinion (desert tortoise) by the FWS and the fact that the event no longer has promoter interest. Retaining the MUC criteria for new race routes means that new route alignments could be created. While the opportunity for application is limited and would almost certainly have to be addressed in an EIS, potential impacts could be significant.

CUMULATIVE IMPACTS

General Vegetation

The existing planning environment provides a relatively high level of protection for vegetation communities in the Planning Area. This is due to the large portion of the Planning Area that is in Joshua Tree National Park, wilderness areas, BLM ACECs, and Chocolate Mountains Aerial Gunnery Range. Implementation of the Rangeland Health Standards and Guidelines for livestock grazing will positively benefit vegetation communities to a small degree because grazing levels

are low in the four grazing allotments and only occasional in three of the four.

Most surface disturbing activities result from authorized activities such as utility installation, communication sites, and mining. Historically, most mining activity in the Planning Area was small in size. In recent decades, several large mines occupying several thousands of acres have been developed in the southern part of the Planning Area. Effects of mining are most significant on rare communities such as Playas and Desert Dry Wash Woodland in the Planning Area.

Invasions of exotic plants, especially the widespread conversion from native perennial grasses and forbs to alien annual grasses may disrupt community associations. Changes in insect consumption, seed dispersal, and pollination will continue to alter plant community species composition. Increases in fires carried by alien annual grasses may also effect plant community species composition.

Casual use impacts are low. Visitation is low and seasonal and concentrated in LTVAs. Casual use in open dunes and playas is very low, but heavy use could be impacting them and adjacent Desert Chenopod Scrub communities. The proposal designation of routes would (along with the effects of the CDPA in 1994) reduce the total length of roads by 18%.

Where Dune and Playa vegetation communities are open for vehicle cross-country travel, these vegetation communities as well as Desert Chenopod Scrub communities adjacent to playas may be altered and even eliminated totally.

Burro grazing and trampling of vegetation in the southern part of the Planning Area is heavy. Burros are above carrying capacity and have expanded outside of herd management areas.

Special Status Plants

Most special status plants are receiving few, if any, impacts. However, inventories are not thorough, and the actual distribution of each species is poorly known. Generally, surveys for special status plants are conducted prior to project authorization, and avoidance of plants is standard.

Only five special status plants have more than 2 percent of their potential range in grazing allotments. Two of these are not eaten by cattle. Increases in fires carried by alien annual grasses may affect most special status plants, most of which are not fire-adapted.

Biological Crusts

Due to the low level of surface disturbing activities in the Planning Area, biological crusts should be in good condition. In the four grazing allotments, there may be some disturbance from hoof action; this would be most severe near and at water sites and along trailing areas. The effect of the conversion of ground cover from native perennial grasses and forbs to alien annual grasses is not known. Increases in fires carried by alien annual grasses may affect biological crusts over large areas.

Riparian/Wetland

The few riparian and wetland areas are receiving minimal disturbance except in the southern part of the Planning Area where burro populations exceed carrying capacity. Trampling at water sources has disturbed riparian and wetland vegetation at these sites.

Elsewhere, most springs and small streams are in mountains in designated wilderness areas; associated riparian and wetland vegetation is undisturbed. However, tamarisk infestations at springs and seeps has degraded some sites.

Noxious Weeds

Over large areas of the California Desert, including the Planning Area, alien grasses have replaced native perennial grasses and forbs. The overall effect of these large scale conversions on plant communities is unknown. Noxious weeds are known to invade new areas along roads and at disturbed sites. The potential for invasion of new noxious weeds remains high.

In addition, non-native tamarisk trees have replaced native riparian communities along rivers and streams and even at springs throughout the West. Due to the scarcity of flowing streams, tamarisk infestation has occurred primarily at springs in the Planning Area. There has been some effort expended on eradication at these sites.

4.1.5 Wildlife Management

From Issue 1: Standards and Guidelines

The National Fallback standards and guidelines would promote the ecological function and processes necessary to maintain and improve special status species habitats on the four grazing allotments. Since species would be considered in meeting rangeland health standards, livestock grazing practices would be designed to promote the conservation and recovery of listed species. More specifically, increases in plant vigor, biomass, and seed production will provide increased food for animal communities. Increases in plant cover and litter will provide increased shelter for animals against weather and predation. These effects may be most direct for invertebrates, but abundance would result.

Increased plant diversity, especially in the shrub and tree layers will increase animal diversity by providing increased plant community structure improvements in structure, diversity, and size of riparian habitats will be especially effective in increasing animal diversity and sustaining migratory bird populations.

Since native animals, especially insects, have evolved with native plant communities, reducing noxious weeds, such as tamarisk in riparian habitat, and prevention of the introduction and spread of new noxious weeds will aid in increasing or maintaining animal diversity and abundance.

From Issue 2: Recovery of the Desert Tortoise

Desert Tortoise

The following description of impacts is not exhaustive, but highlights the more significant impacts. For a more complete description of activities affecting desert tortoise, see *Current Desert Tortoise Management Situation in Northern and Eastern Colorado Desert Planning Area*.

Overall BLM policy for management of desert tortoise habitat is set forth in *Desert Tortoise Habitat Management on the Public Lands: A Rangeland Plan*. It was signed in 1988. BLM habitat categories (I, II, and III) are established in this document. The California Statewide Desert Tortoise Management Policy established more specific tortoise habitat management policies for California and developed the map of tortoise habitat categories.

More than a million acres of critical habitat (47%) in Federal ownership are withdrawn from various uses for special purposes (Table 4-5). The withdrawals for CMAGR, JTNP, and wilderness restrict public access and uses, and they provide a high level of protection for desert tortoise habitat. Additional tortoise habitat not designated as critical habitat is also in these withdrawals; especially where contiguous with critical habitat, these areas add to the total tortoise habitat overall receiving a high level of protection. The other withdrawals primarily restrict disposal of the lands from Federal ownership.

In addition, the BLM has several ACECs (Map 2-1 Appendix A) that are entirely within desert tortoise critical habitat. However, only the Chuckwalla Bench ACEC was designated for protection of rich natural communities and important tortoise habitat. It includes about 101,674 acres of tortoise habitat. It established priorities for land acquisition (much accomplished), designated routes of travel, developed interpretive signing and brochure, and limited camping to within 100 feet of open routes. The BLM also has six habitat management plans (Map 2-1 Appendix A); however, only the Milpitas Wash HMP contains measures addressing desert tortoise habitat needs.

The most significant effects on desert tortoise arise from activities on private lands and on multiple-use activities authorized mostly on BLM lands.

About 328,000 acres (16%) of desert tortoise critical habitat lie within utility corridors. Strong mitigation measures, including compensation, are applied to utility construction and maintenance projects. Nevertheless, even after restoration efforts are made, there is a residual habitat disturbance resulting in loss of food and cover for tortoises. For most utility lines there is a service road that is open to the public. Pipelines create the largest and most severe and longest lasting disturbances. Utilities probably do not significantly fragment tortoise populations, as tortoises can move freely over level, disturbed surfaces.

Table 4-5. Acres (and percentages) of Federal lands in critical habitat that are withdrawn from multiple-use; the portion of JTNP outside of critical habitat is shown, also.

Withdrawal	Acres in critical habitat	Percent of critical habitat	Percent of Planning Area
CMAGR	187,988	8	3
JTNP inside critical habitat ¹	161,691	7	3
JTNP outside critical habitat ¹	283,760	12	5
BLM wilderness	434,233	19	8
PLO 5224 (BLM)	1,570	<1	<1
Classification and Multiple Use Act (BLM)	4,283	<1	<1
BLM Acquired Lands (non-wilderness)	23,513	1	<1
TOTAL IN NECO PLANNING AREA	1,097,038	47	20

1. In addition to the national park withdrawal, most of Joshua Tree National Park is also designated wilderness.

The Colorado River Aqueduct (Map 2-1Appendix A) is operated by the Metropolitan Water District. The major effects of the canal are 1) impeding of the movements of animals, 2) altering of surface water flow patterns across syphons using dikes, 3) and potential flooding of water-wasting zones (open desert areas owned by Metropolitan Water District where water is diverted in the event there is a need to drain the Canal).

The effects of grazing use on desert tortoise and on desert tortoise critical habitat in all four of the allotments has been reviewed by USFWS through formal consultation according to procedures set forth in the Endangered Species Act. Grazing in these allotments has special stipulations to protect desert tortoise. None of the four allotments has an allotment management plan.

The Chemehuevi Allotment includes a substantial amount of the Chemehuevi Critical Habitat Unit. However, the allotment has only a few head of cattle at most (about 15), and it has had none since 1989 (see Table 3- 7 grazing). The one developed livestock water is not in critical habitat. Based on this history of grazing use, effects of grazing in this allotment are not significant.

The Lazy Daisy Cattle Allotment covers 260,025 acres (11%) of critical habitat, all within the Chemehuevi Critical Habitat Unit. Grazing use of this allotment has been light to moderate for the past 15 years (Table 3-7 grazing). Although cattle are in the allotment year-round, the general pattern of use is that cattle forage in tortoise habitat in Ward Valley and Clipper Valley primarily in the winter and spring; the cattle move into the cooler Old Woman Mountains in the summer. There are currently nine watering sites in tortoise critical habitat; two new watering sites were approved in the biological opinion for this allotment.

The impacts of cattle grazing can include the following: 1) competition for forage (Avery 1998); 2) trampling of tortoise burrows (Avery 1998); 3) changing of plant composition, density, and cover (Avery 1998, Blydenstein *et al.* 1957, Waser and Price 1981); and 4) compaction of soils.

Competition for forage is possible because of the overlap of diets (Avery 1998). This potential is increased since cattle are in tortoise habitat in the spring when annual vegetation that tortoises require is available. Since the Lazy Daisy Allotment is an ephemeral/perennial allotment, a special authorization could be made for ephemeral (annual plant) forage in years when forage exceeds 350 pounds/acre. Although cattle could increase in numbers then, the abundance of forage would reduce the significance of such an increase to tortoises. The greatest effects on tortoises are probably in poor annual plant years when cattle will eat even the small amount of annual plant forage available (Avery 1998).

Removal of vegetation cover can reduce the capability of tortoises to thermoregulate and to find protection from sun or wind. Avery (1998) observed the trampling of tortoise burrows and the entrapment of a live tortoise, potentially leading to death. Compaction of soils, most pronounced around springs, water troughs, corrals, and salt licks, can limit tortoises in their selection of burrowing sites.

Highway traffic has been, and continues to be, an important cause of mortality for the desert tortoise (Berry and Nicholson 1984). In addition to direct mortality, roads cause habitat fragmentation and restriction of movements and gene flow. Roads also provide increased access to remote areas for illegal collection and vandalism of plants and animals (Nicholson 1978, Garland and Bradley 1984, Boarman and Sazaki 1996, Jennings 1991).

Closing some roads following the criteria noted in section 2.5 will benefit the tortoise through reduced vehicle mortality and illegal collection. The proposed “open” road designations would result in 24 miles per township (36 sections) for all critical habitat, not counting areas of “open” washes systems.

The Border Patrol conducts a large illegal alien interdiction program in the southern half of the Planning Area. The two major migration arteries are the Southern Pacific Railroad and Highway 78 corridors. Most agents work in vehicles primarily on highways and major service roads, but occasionally they give chase off these roads onto smaller desert roads, in washes, and cross-country. Some alien rescues require off-road travel as well.

Mining exploration and development activities can result in a direct loss of habitat and direct mortality from equipment and vehicles. The BLM has consulted with the USFWS on small (<10 acres) mining operations; a programmatic biological opinion provides standard stipulations for protection of tortoise and their habitat. The map of high mineral development potential (Map 4-2 Appendix A) shows that only sand and gravel has a significant occurrence and potential for development within tortoise critical habitat (about 25,000 acres).

Various illegal activities occur despite the best efforts of rangers and visitor services staff to provide law enforcement and public education. Among the illegal activities affecting desert tortoise are the following:

- 1) Collecting of tortoises for pets or other uses;
- 2) Shooting of tortoises;
- 3) Collecting of vegetation, especially cactus and ocotillo;
- 4) Dumping of refuse, car bodies, and hazardous waste;
- 5) Salvaging of scrap metal from bombing;
- 6) Methamphetamine manufacturing; and
- 7) Illegal immigration.

Except for shooting (see Berry 1986), the significance of most of these relative to other impacts on tortoises is not known. Most of these activities result in off-road travel, resulting in additional surface disturbance. Those activities involving illegal animal or plant removal disrupt community structure and ecosystem processes.

Desert tortoises, particularly hatchlings and juveniles, are preyed upon by several native species of mammals, reptiles, and birds. Predation by the common raven (*Corvus corax*) is intense on younger age classes of the desert tortoise. Common ravens are found in greatest concentrations in and near agricultural and urbanized areas (Knight *et al.* 1993). Particularly large concentrations are found near Cadiz where they make heavy use of the grape and citrus orchards (Knight 1994). Away from this area, ravens are most abundant near landfills and along major highways where roadkills and trash augment food supplies (FaunaWest Consultants 1990).

Between 1968 and 1992, raven populations in the Sonoran Desert increased more than 1400 percent (Boarman and Berry 1995). Since 1991, evidence of excessive raven predation on juvenile and hatchling tortoises has been found at eight sites - four in Ward Valley, two in Chemehuevi Valley, one in Shaver Valley, and one in northern Chuckwalla Bench (Boarman, unpubl. data). As part of a two-year experimental raven control program, eight ravens with three or more tortoise shells beneath their nest were shot. Two each were in Ward Valley, Chemehuevi Valley, Shaver

Valley, and Chuckwalla Bench. There is currently no active raven management program in the NECO Planning Area.

The regional landfill at Eagle Mountain near Desert Center and Mesquite near Glamis, will have a raven management program implemented. There are also local solid waste landfills authorized at Indio Hills, Blythe, Desert Center, and Picacho. These facilities employ methods to limit raven foraging. Illegal dumping sites are known at Essex, Vidal, Vidal Junction (two sites), Amboy, and Chambliss; these sites vary in their use.

Upper respiratory tract disease (URTD) has contributed to high mortality in the western Mojave Desert. URTD and various shell diseases are known to occur in the northern and eastern Colorado Desert areas. Assessments of permanent study plot sites in Chemehuevi Valley and on Chuckwalla Bench have shown population declines as high as 90 percent over the past decade. Shell diseases are implicated as a major factor. The causes of these diseases have not yet been identified.

Repeated fires are known to decrease the perennial plant cover and to aid some alien annual plants. Some alien plants provide fire fuel to carry flames, potentially resulting in larger fires in the future.

Special Status Animals

Most special status animals benefit from the policies established in the Rangewide and Statewide tortoise policies and from the management actions established to protect desert tortoise habitat. Most significant are those policies limiting surface disturbing activities or requiring compensation for disturbance of habitat. In consultation with the USFWS and CDFG, the BLM and project proponents develop stipulations to mitigate the effects of projects on desert tortoise or its habitat. The resulting "terms and conditions" in the USFWS biological opinion provide mitigation measures beneficial to other elements (e.g., special status animals) in the ecosystem on which the desert tortoise depends.

From Issue 3: Management of Special Status Animals and Plants and Natural communities **Bighorn Sheep**

The existing planning environment provides a relatively high level of protection for many special status species. The major elements in this protection are JTNP, CMAGR, and BLM wilderness. None of these were designated specifically for protection of bighorn sheep, but all three restrict activities to a low level of human disturbance and habitat modification. Table 3-4 Chapter 3 shows the acres and percent of the "occupied range," "unoccupied former range," and "movement corridor" (see Map 2-18 Appendix A) in these three areas. A total of 75 percent of the occupied range, 48 percent of the unoccupied former range, and 40 percent of the movement corridors are in these protected areas.

Five HMPs developed for management of bighorn sheep cover 548,000 acres. HMPs are generally limited by the Multiple-Use Class designation of the area.

Cattle potentially affect bighorn sheep by competing for forage, by altering the vegetation composition, by introducing diseases, by fouling or disrupting water sources, or by causing changes in behavior or habitat use. A variety of papers (Bodie and Hicks 1980, Dodd and Brady 1986, Cunningham and Ohmart 1986, Ganskopp and Vavra 1987, Ganskopp 1983, King and Workman 1984, Kornet 1978, McCullough *et al.* 1980, McQuivey 1978, Seegmiller and Ohmart

1981, Wehausen and Hansen 1986, Wilson 1968, and Wylie and Bates 1979) dealing with livestock impacts have given mixed results; McCarty and Bailey (1994) summarize what is known on the subject.

Wehausen and Hansen studied competition between bighorn sheep and cattle (Lazy Daisy Allotment) specifically in the Old Woman Mountains (and other nearby ranges). They found that there was a spatial separation of bighorn sheep and cattle. Bighorn sheep, especially ewes, used mostly water sources not used by cattle. Cattle reportedly trampled and over grazed vegetation around waters, fouled the water with mud, feces, and urine, and dominated the site through long-term attendance. However, they concluded that habitat separation was most likely due to differences in habitat preferences between bighorn sheep and cattle rather than avoidance of cattle by bighorn. They did conclude that cattle were likely a significant reservoir for diseases and that bighorn sheep demography (population age and sex structure) was likely affected; nevertheless the bighorn sheep population appeared stable. They recommended that the boundaries of the allotment be modified to remove overlap, as indicated in the CDCA Plan.

Citing Wehausen (1988) and Clark *et al.* (1985), Bleich *et al.* (1990) asserted that the Old Woman Mountains deme had been "depressed during the 1980s, possibly because of a high prevalence of cattle disease." Bleich *et al.* (1990) stated that augmentation of the Iron Mountains deme was not attempted because diseased bighorn sheep occasionally move south into the Iron Mountains. They emphasized the hazard of transmission of disease from cattle to bighorn sheep in movement corridors, also. Jessup (1985) asserted that cattle may be the source of most diseases of bighorn sheep; he concluded that "at present, the best management strategy is to maintain bighorn herds at optimal nutritional planes, at or below carrying capacity and as widely separated as possible from domestic livestock."

In his follow-up studies, Wehausen (1988, 1990) compared bighorn disease epidemiology and bighorn demography between the Old Woman Mountains and other nearby demes. Wehausen (1988) found that cattle disease in the Old Woman Mountains had its greatest effect in excessive lamb mortality which could lead to long term population declines. He found that population declines were broken during droughts when populations of gnats, the transmission vectors for bluetongue and epizootic hemorrhagic disease, were low. He believed that the Old Woman Mountains deme would be much larger without grazing. He also found an instance in the Old Woman Mountains where cattle so severely degraded a natural spring that bighorn use was terminated (Wehausen 1990).

Table 4-6 shows the acres and percent of the "occupied range," "unoccupied former range," and "movement corridor" in the four livestock grazing allotments (Map 2-5 Appendix A). None of these allotments has an allotment management plan.

Table 4-6. Acres and percent of area for three categories of bighorn sheep use in livestock grazing allotments in the NECO Planning Area.

Bighorn sheep use categories	Lazy Daisy Cattle	Chemehuevi Cattle	Rice Valley Sheep	Ford Dry Lake Sheep
Occupied Range	125,644 (7)	2,643 (<1)		
Unoccupied Former Range			195 (<1)	
Movement Corridor	105,438 (18)	61,942 (10)		

The forage base has been altered significantly with the invasion of exotic plants, especially Mediterranean grass (*Schismus* spp.). Changes in plant composition in bighorn sheep range and the effects on bighorn diet are not known.

The implication of currently in place waters in bighorn sheep habitat, both natural and artificial, is that they insufficiently address the goal of introducing bighorn sheep to usable forage. Assuming a limit of 3 miles foraging radius from waters and that all these waters continuously function (which is not the case), about 48% of the forage in bighorn sheep range is generally unavailable. South of I-10 the figure is 35%.

To reestablish lost demes and increase metapopulation viability, demes have been reestablished in the Whipple Mountains and have been augmented in the Sheephole Mountains and Chuckwalla Mountains. Lost demes remain in the West Riverside Mountains, Riverside Mountains, Big Maria Mountains, Little Maria Mountains, McCoy Mountains, Mule Mountains, Palo Verde Mountains, and Cargo Muchacho Mountains (see Map 2-17 Appendix A). Bleich *et al.* (1990) considered reestablishment of lost demes to be an important and cost-effective tool in maintaining genetic variation and minimum viable population size.

CDFG has conducted extensive inventory and monitoring surveys for bighorn sheep demes for several decades. CDFG has also conducted or sponsored bighorn sheep research on a variety of topics (e.g., Andrew 1994; Berbach 1987; Bleich 1993; Wehausen and Hansen 1986; Wehausen 1988, 1990; Torres 1994).

Military aircraft activities within CMAGR potentially disturb bighorn sheep and disrupt activities. Weisenberger *et al.* (1996) found that bighorn sheep responded to aircraft overflights with increased heart rates and altered behavior; however, animal response decreased with increased exposure. It is likely that bighorn sheep around CMAGR have habituated to the aircraft activity

Other Special Status Animals

The numerous special status animals vary in their respective sensitivity to the complex of impacts occurring. The following description of impacts is not exhaustive, but rather is intended to highlight the more significant impacts based on current and projected levels of human activity. The impacts that are described for natural communities (see Section 4.1.4 Vegetation Management, Issue 3 under natural communities) will affect individual species, also, through changes in habitat or disruption of natural processes.

The existing planning environment provides a relatively high level of protection for many special status animals. The major elements here are JTNP, CMAGR, and BLM wilderness. None of these

were designated specifically for protection of these special status animals, but JTNP and wilderness were designated for natural values. Table N-4 Appendix N shows the acres and percent of the range of each special status animal that is in these protected areas. Most species have 25-50 percent of their range in these areas. Notably, pocketed free-tailed bat and western mastiff bat have more than 70 percent of their ranges in these areas, while Gila woodpecker, yellow warbler, flat-tailed horned lizard, and mountain plover have little to none of their range in these areas. In addition, special status animals presumably receive some benefit from the measures applied by BLM to desert tortoise critical habitat (Map 3-5 Appendix A) and BLM designated Categories I and II habitat (Map 2-3 Appendix A).

Several ACECs have been developed for protection of special habitats; some of these include habitat used by special status animals. Among these ACECs are Corn Springs ACEC (2,500 acres), Chuckwalla Valley Dune Thicket ACEC (2,300 acres), and Chuckwalla Bench ACEC (103,000 acres). ACEC plans have been implemented for each of these areas. In addition, the Milpitas Wash Habitat Management Plan (180,000 acres) was developed in 1985; it includes habitat for desert tortoise, burro deer, Couch's spadefoot toad, and several special status birds.

Table N-5 Appendix N shows the acres and percent of the ranges of each special status animals within utility corridors. These figures include the entire corridor length and width, even though the amount actually occupied by facilities is much less.

Table N-5 Appendix N shows that 25 of 29 special status animals have more than 10 percent of their range within a utility corridor and seven have more than 20 percent. Although the flat-tailed horned lizard has 73 percent of its range in a utility corridor, the actual amount of acreage is small for that species, and the acreage is not in any of five designated "Management Areas" for that species. The impacts of utilities vary greatly based upon type, design, operation, and maintenance. All result in some habitat loss, with pipeline construction being the most severe. With above ground structures, transmission lines have significant other effects by providing nesting and roosting sites for birds; however, none of the special status animals are known to commonly use transmission line towers.

Impacts of livestock grazing on particular species are not known. However, the stocking rates and frequency of use rates are so low for Chemehuevi, Rice Valley, and Ford Dry Lake Allotments that grazing likely has little effect on species in those allotments. Bendire's thrasher has 19 percent of its range in the Lazy Daisy Cattle Allotment; however, specific impacts of cattle grazing on that species have not been identified. Table N-6 Appendix N shows the acres and percent of the range within grazing allotments for each special status animal. Twelve of 29 species have more than 10 percent of their range within an allotment.

Aqueducts and railroads may function as barriers, also. On the western edge of the Planning Area, the Coachella Canal, in particular, and its fences provide a barrier to westward movement of burro deer. Prior to fencing and the development of water sources, there was significant deer mortality in the Coachella Canal.

Impacts of vehicle use of minor routes and washes is most important at locations where critical animal activities occur. Among these are nesting, nursing and watering sites. The following critical sites/activities for specific species or species groups are generally fixed or predictable over time:

Bats - Caves and mines used for nurseries, winter hibernacula, and summer roosts;
Burro deer - Water sources;
Hawks and falcons - Eyries (cliff nests).

Vehicular activity near these sites at the proper season could disrupt vital life functions and affect population status.

Sites for nesting or rearing of young for special status animals are more evenly spread out in suitable habitat within the range of the species. Notwithstanding this, due to specific habitat requirements, suitable habitat for the following species is very limited even though the range may be extensive: Mountain plover (playas and flats near agriculture), elf owl (riparian), Gila woodpecker (riparian), vermilion flycatcher (riparian), yellow warbler (riparian), Colorado Desert fringe-toed lizard (sand dunes), Mojave fringe-toed lizard (sand dunes), and Couch's spadefoot toad (flooded impoundments in washes). Routes within suitable habitat for these species may disrupt critical activities during certain times of the year (e.g., nesting, breeding).

Small scale mining activity can be important if it occurs at a critical site as described above. Seasonal restrictions on mining operations can sometimes effectively mitigate the impacts near a cave, mine shaft, water source, eyrie, riparian zone, dune, or playa. The reopening of small mines can disrupt bats that have become established inside. Effects may be difficult or impossible to mitigate effectively if bat critical activity occurs year-round in the mine.

Large mines may disrupt animal activity, including critical activity, over a larger area. The overall effects would depend upon the habitats to be disturbed and the species present. Even with large mines, effects are likely to affect animal populations only locally, and the greatest significance would still be at the critical sites listed above.

Other widely disseminated activities that result in low level or localized effects include camping, long-term visitor (camping) areas, and communications sites. Special status animal populations may be disturbed near these activities, but effects are not likely to be significant except at a critical site as listed above. In addition, the number of bird collisions with communication towers has been increasing nationwide, and there is concern that the level may actually effect some bird populations. Effects are probably greatest on birds that migrate at night.

Desert washes are subject to recreation use by campers and off-highway vehicle enthusiasts, both activities can cause disturbance to plants and wildlife and lead to habitat degradation. At times, off-highway vehicles stray from the wash bottoms, breaking down wash banks which results in crushing of burrows and vegetation. Noise from vehicle travel can disturb sensitive species such as birds and bighorn sheep.

Recreational activities, such as hunting, target shooting, rock-hounding, birdwatching, and rock-climbing can disturb special status animals. Again, effects are probably only significant at critical sites.

Collecting of animals for pets or other uses could have local effects on the populations of some special status animals, such as rosy boa (especially along low-volume, paved highways). Collection of prairie falcon fledglings by falconers, poaching of deer, and illegal shooting of other wildlife (Berry 1986) are known to occur, but the amount and significance is not known.

European starlings, an introduced species that is found throughout the U. S., is not well adapted to the desert. However, it may be found at riparian areas (e.g., Corn Springs) where it may displace elf owls and Gila woodpeckers (and others) from nest cavities in saguaros, cottonwoods, and other trees.

Military aircraft activities within CMAGR potentially disturb burro deer and other special status animals and disrupt their activities. Weisenberger *et al.* (1996) found that deer (and bighorn sheep) responded to aircraft overflights with increased heart rates and altered behavior; however, animal response decreased with increased exposure. It is likely that deer around CMAGR have habituated to the aircraft activity.

From Issue 4: Wild Horses and Burros

Desert Tortoise

Impacts from the two burro Herd Management Areas (Table 4-7) in tortoise critical habitat include: burrow trampling, competition for forage and degradation to habitat through reduced biomass and plant cover (Kleiner and Harper 1977). However, burro use in critical habitat is low and intermittent. The Piute Mountain HA, entirely in critical habitat, currently has an estimated 37 burros even though the target management level is 0.

Table 4-7 Acres and percent of critical habitat for three burro herd areas (HAs) and associated herd management areas (HMAs) and burro concentration areas (CAs).

Desert Tortoise	Piute Mountain		Chemehuevi			Chocolate/Mule Mtns		
	HA	CA	HA	HMA	CA	HA	HMA	CA
Critical Habitat	39,781 (2)	6,828 (<1)	128,866 (6)	175,347 (9)	none	128,866 (6)	175,347 (9)	147 (<1)

Bighorn Sheep

Populations above AML can result in overgrazing of forage (Hanley and Brady 1977; Douglas and Norment 1977, Elliot 1959, McQuivey 1978), grazing outside of the HMA, and damage to water sources needed by bighorn sheep (Weaver 1959). Some research has shown that bighorn sheep avoid water sources used or occupied by burros (Dunn and Douglas 1982). Although some springs have been fenced to exclude burros (but not bighorn), others may be impacted from trampling of soil, denudation of vegetation, and fouling of the waters. Seegmiller and Ohmart (1981), Ginnett and Douglas (1982), McMichael (1964), Walters and Hansen (1978), and many others have found a large overlap in diet of bighorn sheep and burros; where burro populations are above forage carrying capacity, competition would be expected. Table 4-8 shows the acres and percent of the "occupied range," "unoccupied former range," and "movement corridor" in three burro herd management areas (Map 2-25 Appendix A).

Table 4-8. Acres and percent of area for three categories of bighorn sheep use in burro herd management areas in the NECO Planning Area.

Bighorn sheep use categories	Piute Mountain HA	Chemehuevi HMA	Chocolate/Mule Mtns HMA
Occupied Range	26,521 (2)	155,181 (9)	129,096 (8)
Unoccupied Former Range		1,091 (<.5)	24,680 (4)
Movement Corridor	5,124 (1)	70,261 (12)	24,832 (4)

Other Special Status Species

Burros may degrade riparian habitat where they seek water and shade which can have an indirect affect on species of birds from the impacts on riparian vegetation, especially where burro numbers exceed carrying capacity. Although no mountain plovers have actually been seen, 12 percent of the projected range is within the Chocolate/Mule Mountains HMA. The Chocolate Mule Mountains HMA also includes significant portions (52%, 15%, and 53%, respectively) of the projected ranges of Gila woodpecker (State-listed), vermilion flycatcher, and yellow warbler. Ninety three percent of the projected range of the State-listed elf owl is within the Chemehuevi HMA. These last four bird species are all insectivores that depend upon riparian habitat with a well developed overstory.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Desert Tortoise

Impacts to desert tortoise from vehicle travel include: death from being struck by vehicles traveling on roads and highways, habitat fragmentation, increases in predator (especially ravens) populations using vehicle roadkills to supplement the diet, changes in plant community from vehicle-related fires, loss of foraging and burrowing habitat from the road and activities associated with off-road camping, restriction of movements of tortoises, changes in plant composition due to alien plant introductions along road corridors and mortality of tortoises from various illegal activities such as collecting (Berry *et al.* in press) and shooting (Berry 1986) of tortoises.. These impacts are most severe along paved roads where vehicle frequency and speed is greatest. Impacts on dirt roads are also a function of vehicle frequency and speed. Populations are known to be significantly depressed along heavily traveled highways (Nicholson and Berry 1978).

With the proposed designation of routes there are 0.7 miles of road per square mile (or 24 miles per township) in desert tortoise critical habitat. Route density in tortoise habitat outside critical habitat is about the same. In addition, on BLM lands an unknown amount of navigable washes are open for travel. There are also a few open areas, dunes, and playas that are open for travel off of roads and washes; none of these are in desert tortoise critical habitat. On BLM lands, visitors may drive off of routes to stop, park, or camp. These activities are limited to a strip 300 feet on either side of a route except in Chuckwalla Bench ACEC, where the limit is 100 feet. In JTNP and CMAGR road systems are small and relatively fixed consistent with their mandates. There is a biological opinion for the use of that portions of CMAGR in Critical Habitat for the desert tortoise. The biological opinion directs speed limits to 25 mph.

A State Highway system of paved roads is in place. Except for upgrading of Highway 95, changes in the highway network are not expected.

Bighorn Sheep

Bighorn sheep populations are fragmented by numerous highways, roads, railroads, and aqueducts. Major barriers to bighorn sheep movements are Interstate 10 and Interstate 40. Movements across these interstate highways is believed to be so small at this time that the metapopulation boundaries are drawn there. Movement under bridges is not known to occur along these highways. The Colorado River Aqueduct is a major barrier in those places it is above ground.

Lesser barriers include Highways 66, 62, 177, 95, and 78. The AT&SF Railroad (parallel to Old Highway 66) and the Eagle Mountain Railroad (scheduled for reactivation) likely inhibit bighorn sheep movements between demes; however, bighorn sheep do cross these and other linear human disturbances (e.g., transmission lines, fences) even across broad valleys (Bleich 1990). These movements are considered vital to the maintenance of genetic variability necessary to sustain a viable metapopulation (Bleich *et al.* 1990, Schwartz *et al.* 1986).

Other Special Status Species

Vehicle use on highways and, to a lesser degree, roadways results in some mortality of wildlife, especially vulnerable or slow moving animals, such as flat-tailed horned lizards and desert rosy boa. The amount of mortality for various special status animals and the relative importance to the populations is not known. To the extent that the mortality affects populations, highways and roads may serve as barriers to animals movements and gene flow. Culverts and bridges along major highways may mitigate the barrier effects.

Impacts of vehicle use of minor routes and washes is most important at locations where critical animal activities occur. Among these are nesting, nursing and watering sites. The following critical sites/activities for specific species or species groups are generally fixed or predictable over time:

- Bats - Caves and mines used for nurseries, winter hibernacula, and summer roosts;
- Burro deer - Water sources;
- Hawks and falcons - Eyries (cliff nests).

Vehicular activity near these sites at the proper season could disrupt vital life functions and affect population status.

From Issue : Land Ownership Pattern

The BLM has been acquiring wildlife habitat in the NECO Planning Area for the past 20 years. Direct purchases have been made using Land and Water Conservation funds appropriated by Congress and tortoise habitat compensation funds. Most of these acquisitions have been in the Chuckwalla Bench ACEC. The purpose of these acquisitions was specifically to bring tortoise habitat into Federal ownership.

Recently the BLM has made very large acquisitions from Catellus Corporation using both donated and Land and Water Conservation fund sources. Most of these lands have been in and around wilderness areas. The purpose of these acquisitions was to bring endangered species habitat (i.e., desert tortoise) and wilderness inholdings into Federal ownership.

CUMULATIVE IMPACTS

General Wildlife

Overall, impacts to wildlife from human activities are low in the NECO Planning Area. This is

because a high proportion of the NECO Planning Area is in reserve level management (i.e., Joshua Tree National Park, BLM wilderness, BLM ACECs, and even most of Chocolate Mountains Aerial Gunnery Range). Despite this, the invasion and spread of alien plants, heavy burro use in several areas, and barriers to animal movement are significant impacts on wildlife populations.

Various old and new utilities form a network throughout the desert. The direct reduction in habitat is small, but indirect impacts resulting from access on maintenance roads may be significant in some areas. Transmission lines provide perching and nesting sites for birds of prey. This may be beneficial for these species, but may negatively effect populations of some prey species. Additional utilities connecting the Los Angeles and San Diego areas with the rest of the country can be expected.

An established network of roads and highways provides access for miners, recreationists, and others. Roads and paved highways promote raven populations by providing roadkills used as food. Exotic, weedy species increase their distribution by invading down roadways. The Interstate Highway system (I-40 and I-8) is a major fragmenting barrier for wildlife, especially for slow moving reptiles such as desert tortoise.

The spread of exotic plants has degraded habitat for wildlife throughout the desert. Tamarisk infestations at springs are especially detrimental in the NECO Planning Area. Effected animals include migrating songbirds, bats, and other riparian dependent species. Desert habitats have been degraded by the replacement of native perennial grasses with exotic annual grasses and forbs. The effects on wildlife species are not fully understood at this time.

Urbanization in the region is centered around a few rural communities. Most of these have changed little for many decades. To date, loss of habitat to urbanization has not been great, and indirect effects on wildlife have been negligible.

Livestock grazing has occurred historically throughout much of the desert. However, the four grazing allotments cover only a small portion of the Planning Area, grazing intensity is low, and use is intermittent in three of the four allotments. Grazing is more important in and around the Mojave National Preserve to the north of the NEMO Planning Area. Overall effects on general wildlife are slight in the Planning Area.

Burro use in the HMAs along the Colorado River is significant. Monitoring data has shown that some areas have received excessive burro use, which has resulted in the degradation of riparian habitat in some areas. There have been continuing gather operations to remove burros where they exceed the lands carrying capacity. However, it is critical to monitor and protect rare and vital habitat associated with springs and riparian areas which are critical to migrating songbirds and some resident water and riparian dependent species (e.g., morning doves, Gambel's quail).

Although most mining operations have been small, there are a few large gold mining operations in the southern part of the Planning Area. There has been some loss of microphyll woodland used by wildlife as movement corridors. Historically, there has been a considerable amount of small mining and exploration throughout the Planning Area, especially in mountains. Some of this small mining activity has displaced wildlife at springs in the past, but there is little of such activity in the Planning Area today.

The California Desert Protection Act of 1994 established wilderness areas throughout the region. Within wilderness areas, the effects of motorized vehicles are virtually eliminated, and other multiple uses are greatly reduced. In addition, Joshua Tree National Park was expanded. Designation of the Mojave National Preserve adjacent to the Planning Area reduced multiple-use management (except hunting and livestock grazing) over several million acres in the region. Large amounts of desert tortoise habitat are now within the Preserve.

The BLM has several habitat acquisition efforts underway. Among these are small and medium sized acreages bought from time to time using compensation funds. Recent purchases from Catellus Land Development Corporation have added several hundred thousand acres to the public land rolls both in the NECO Planning Area and in adjacent regions. These acquisitions increase the capability of Federal and State agencies to manage these lands as wildlife habitat.

There are numerous military bases in the California Desert and nearby in Nevada. Most are very large covering hundreds of thousands of acres. The only military base in the Planning Area is the Chocolate Mountains Aerial Gunnery Range. The Marine Corps Air Combat Center is located just west of the Planning Area. The former is used primarily for bombing practice at small, fixed targets. Only a few acres of wildlife habitat are directly affected by the bombing. For the most part, the Gunnery Range is beneficial to wildlife by excluding conflicting uses.

Various recreational activities, such as camping, hunting, target shooting, rock-hounding, and rock-climbing, can effect wildlife in a localized area. These effects are probably most significant where they occur at a critical habitat feature, such as a spring or cave, or in rare habitats, such as dunes or playas. Wildlife displacement in critical seasons, such as when young are being reared, can be significant.

To the northwest, the West Mojave Coordinated Management Plan (CMP) is currently in preparation. To the south, the Northern and Eastern Mojave CMP is in preparation. To the west, the Coachella Valley Habitat Conservation Plan is in preparation. These plans will implement the desert tortoise recovery plan within their respective areas and will provide management prescriptions and protection for many other special status plants and animals.

Several ACEC plans and habitat management plans have been prepared to address habitat management issues in the Planning Area. Although some have targeted specific special status animals, several others have focused on important habitat for a wide range of wildlife species (e.g., Chuckwalla Bench ACEC Plan, Chuckwalla Valley Dune Thicket ACEC Plan, and Milpitas Wash Habitat Management Plan). The BLM's Rangewide Tortoise Plan and California Statewide Tortoise Management Policy apply to much of the Planning Area; these policy documents provide some benefit to other wildlife species.

Desert Tortoise

Tortoise populations have declined precipitously in much of the California Desert, including some areas in the NECO Planning Area. Surveys at permanent tortoise study plots have shown declines as high as 90 percent in the Chuckwalla Bench and lower Chemehuevi Wash areas. Causes are not yet clear, but mortality from shell diseases and predation are apparently high in these areas.

In the West Mojave, upper respiratory tract disease (URTD) has reduced desert tortoise populations significantly in the past 15 years or more. Individuals with URTD have been found

in most regions of the California Desert, including the NECO Planning Area. As the URTD epidemic spreads, high mortality from URTD will possibly, if not probably, occur in the Planning Area.

Overall, disturbance of tortoise habitat has not been great in the NECO Planning Area (about 1% in critical habitat), but there have been large areas where alien grasses have become dominant. The effects on desert tortoise are not fully understood. Fires have not been common or large in the NECO Planning Area in the past, but may increase as the alien grass cover increases.

Tortoise mortality along Interstate and State highways is high, and populations are depressed significantly within 2 miles of these highways. Effects along major and minor dirt roads is unknown, but may be significant in total.

As evidenced by the large number of desert tortoises in captivity in urban areas, collecting has been high in the past. Whether legal protection and public education have reduced collecting in recent years is unknown.

Agriculture, roadkills, landfills, and other human activities have augmented raven food sources and have resulted in highly inflated raven populations. As a result, raven predation on hatchling and juvenile tortoises has severely reduced recruitment of young in some areas. Although the effects on tortoise populations, have been greatest in the West Mojave, some heavy predation on tortoises has been observed in the Planning Area, also.

Both the Chuckwalla Bench ACEC Plan and Milpitas Wash Habitat Management Plan included desert tortoise as a target species. Both plans cover portions of Chuckwalla Critical Habitat Area. The BLM's Rangewide Tortoise Plan and California Statewide Tortoise Management Policy prescribe policies on land acquisition and retention and on discretionary activities, but do not resolve conflicts with uses authorized in the CDCA Plan.

Other Special Status Animals

Special status animals are affected as described above for general wildlife. However, most of them have reduced populations because of specialized behavior, habitat, or life history features that place them in conflict with human uses. For some special status species, the NECO Planning Area is at the margin of their distribution (e.g., Gila woodpecker, elf owl), and their populations are naturally small. There are currently few management measures planned or implemented for special status animals except bighorn sheep and burro deer.

For both bighorn sheep and deer, there has been an active water development program underway for several decades. This program consists of 1) improvement of natural springs and tenajas (natural rock basin that retains a pool of runoff water), 2) development of artificial waters such as wells and guzzlers, and 3) installation of cattle or burro exclosures at watering sites. Most such improvements for bighorn sheep are located in or at the base of mountain ranges where escape terrain is available. Improvements for burro deer are mostly in washes and rolling terrain near microphyll woodland that provides cover from predators and weather. The water development program, including maintenance of facilities, has been largely directed by CDFG in cooperation with the Society for Conservation of Bighorn Sheep and Desert Wildlife Unlimited with some assistance from BLM.

4.1.6 Wilderness Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with National Fallback Standards, which pertain to soils, riparian and wetland areas, stream function, and native species, and managing grazing activities in accordance with the National Fallback guidelines will benefit wilderness resources to the degree that natural conditions are preserved. It is anticipated that managing ecosystem health and grazing activities accordingly will have no adverse impacts to wilderness. Site-specific projects to implement the National Fallback standards and guidelines will require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

From Issue 2: Recovery of the Desert Tortoise

Management of Category I and II desert tortoise habitat within the Northern Colorado Desert and Eastern Colorado Desert Recovery Units in accordance with the *California Statewide Desert Tortoise Management Policy* will likely have no effect on, or may benefit wilderness resources to the degree that natural conditions are preserved, and plant and animal diversity is protected. None of the actions specific to recovery of the desert tortoise as proposed in the NECO Plan under this alternative are anticipated to adversely affect wilderness resources. Site-specific projects to facilitate recovery of the desert tortoise will require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Actions that maintain or enhance populations of special status animals and plants, and preserve or restore natural communities will have no effect on, or may benefit wilderness resources to the degree that natural conditions are preserved, and plant and animal diversity is protected. Site-specific projects will require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

From Issue 4: Wild Horses and Burros

In accordance with the *Wild Free-Roaming Horse and Burro Act of 1971*, such animals are considered an integral part of the natural system of the public lands in areas where found. It stands to reason, then, that impacts (from wild horses and burros) to the natural conditions of designated wilderness within herd management areas (HMAs) as established through the CDCA Plan are acceptable *if* herd numbers are consistent with the appropriate management levels (AMLs) for the HMAs and herds are managed in accordance with approved management plans. Wilderness management plans may include controls to protect sensitive resources. Where managed at prescribed levels and in accordance with applicable plans, wild horses and/or burros are deemed to have no substantial impacts on natural conditions in the Piute Mountains (where the herd area is currently managed for zero burros), Chemehuevi Mountains, Whipple Mountains, Palo Verde Mountains, Picacho Peak, Indian Pass, and Little Picacho Peak Wildernesses.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Whereas motorized vehicles are prohibited in wilderness except as authorized by the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans, the extent to which unacceptable impacts to wilderness resources occur consequent to motorized-vehicle travel is proportional to the manner and degree of *unauthorized* incursions into wilderness areas. Under this alternative, motorized-vehicle access to wilderness boundaries would be maximized as all “existing” routes would be available for use. When opportunities for such access are maximized, the potential for unauthorized incursions into wilderness is concomitantly increased. However, the extent to which such incursions are anticipated is undetermined.

[Note: Closure of “non-routes” and “partial non-routes” would not affect access to wilderness boundaries given these routes’ apparent lack of use.]

Parker 400 competitive recreation route:

The *Parker 400* competitive recreation route as established through the CDCA Plan incorporates certain routes that comprise the boundaries (partial) of the Turtle Mountains and Whipple Mountains Wildernesses. Prior to enactment of the CDPA (1994), the *Parker 400* corridor occurred immediately adjacent to a portion of the Whipple Mountains Wilderness Study Area (WSA) recommended suitable for wilderness, and a portion of the Turtle Mountains WSA recommended as non-suitable for wilderness. Generally, vehicles could not stray into the Whipple Mountains WSA during a race given limitations imposed by topography, but ample opportunity existed for straying into the Turtle Mountains WSA. Recollection of Needles Field Office staff is that such straying did, in fact, occur during racing events.

Upon enactment of the CDPA, the “non-suitable” portion of the Turtle Mountains WSA was designated as wilderness. Potential for straying into the Turtle Mountains Wilderness would exist upon approval of a competitive off-highway vehicle event in the *Parker 400* corridor, possibly resulting in degradation of wilderness resources. Specific mitigation measures to avert such degradation (e.g., increased use of temporary barriers; closer spacing of race officials along the wilderness boundary; running under “yellow flag” conditions when adjacent to the wilderness boundary; etc.) could be incorporated as stipulations if a permit for an event in this corridor is approved. It is unlikely that straying would occur into the Whipple Mountains Wilderness.

Johnson Valley to Parker competitive recreation route:

The *Johnson Valley to Parker* competitive recreation route as established through the CDCA Plan incorporates certain routes that comprise the boundary (partial) of the Sheephole Valley Wilderness. Although it is not known if straying occurred during past events in this corridor, it is reasonable to expect that course widening, short cutting, and illegal cross-country travel *could* occur during future events given the nature of high-speed vehicle racing in the desert. As evidenced through monitoring of the 1989 Barstow-to-Las Vegas motorcycle race, competitors strayed from the approved course despite the sponsor’s efforts to restrict their travel. Straying from the *Johnson Valley to Parker* route into the Sheephole Valley Wilderness could result in degradation of wilderness resources. Specific mitigation measures to avert such degradation (e.g., increased use of temporary barriers; closer spacing of race officials along the wilderness boundary; running under “yellow flag” conditions when adjacent to the wilderness boundary; etc.) could be incorporated as stipulations if a permit for an event in this corridor is approved.

Competitive off-highway vehicle events in accordance with MUC guidelines:

Where competitive off-highway vehicle events are permitted in accordance with MUC guidelines and the use of wilderness boundary roads is allowed, potential for straying from the approved course into designated wilderness exists; degradation of wilderness resources would be likely. Specific mitigation measures to avert such degradation (e.g., increased use of temporary barriers; closer spacing of race officials along the wilderness boundary; running under “yellow flag” conditions when adjacent to the wilderness boundary; etc.) could be incorporated as stipulations if wilderness boundary roads are used.

From Issue 6: Land Ownership Pattern

Acquisition of private lands within wilderness—a continuing independent process requiring no specific action through the NECO Plan—will benefit wilderness resources to the degree that actions adversely affecting natural conditions are averted. As more lands are acquired within wilderness, assurance that ecological processes can be maintained or enhanced is concomitantly increased.

CUMULATIVE IMPACTS

The Wilderness Act was passed by Congress in 1964 to ensure that population growth and development did not alter all of the Nation’s lands. The Act established the National Wilderness Preservation System wherein federally-owned areas designated by Congress as wilderness would be protected from the effects of population growth and development.

In 1994, Congress enacted the California Desert Protection Act in furtherance of the purposes of the Wilderness Act to secure an enduring heritage of wilderness and public land values for future generations in the face of increasing threats by adverse pressures that might impair, dilute, or destroy these values. Although a multitude of various uses have occurred on what are now designated wilderness lands in the California desert—mineral extraction, livestock grazing, off-highway vehicle operations, and so on—it was determined during the process for assessing wilderness suitability that 137 areas in the CDCA possessed wilderness characteristics. In other words, despite these activities having occurred, the public lands still appeared to be natural in character. Whatever impacts stemming from these activities that remained were deemed to be substantially unnoticeable.

Since designation of certain public lands in the NECO Planning Area as wilderness by Congress, threats to wilderness resource values have been minimized. Management of these lands has conformed to the requirements of the Wilderness Act of 1964 and the California Desert Protection Act of 1994. Cumulative effects of management actions in wilderness since 1994 have been negligible. At the same time, visitor use of most wilderness areas is low. As a result, wilderness characteristics have been retained.

4.1.7 Livestock Grazing Management

From Issue 1: Standards and Guidelines

Rangeland health conditions have been assessed for all allotments. Except the West Well in Chemehuevi Allotment, all standards have been attained. No impacts to cattle grazing activities are expected when conducting prescribed treatment of tamarisk infestation at the well and reduction of burro numbers.

In this alternative, cattle and sheep grazing use on 605,454 acres of public land is expected to continue with a combined management strategy based on allotment management plans, grazing regulations, activity plans, and mitigation measures specified in Appendix C from the current biological opinion. Installation of a few minor range improvements could be necessary to maintain current rangeland health and resource objectives.

Although not anticipated, there may be a need for temporary reductions or shifts in grazing activities in small areas for a limited period to restore soil and vegetative conditions. These potential actions could require the lessee to herd cattle or sheep, construct range improvements to control livestock movement, and convert to another class of livestock for better distribution. The lessee would be responsible for control and management of livestock while restoration continues. If the remainder of the allotment were not available for grazing use during this period, the lessee would have to remove livestock until conditions are restored or range improvements are constructed.

The improved vigor of perennial vegetation from maintenance of the standards would increase cattle weaning weights. Livestock in better body condition would improve animal health and reduce death loss through stress-related diseases. Implementation of standards would not impact current sheep grazing operations under this alternative. Cattle grazing activities would see insignificant to minimal changes to their operations with implementation of the National Fallback standards.

From Issue 2: Recovery of the Desert Tortoise

Currently, grazing activities for all allotments have been reviewed through Section 7 consultation process by the USFWS and these activities have been mitigated through biological opinions. Sheep and cattle grazing activities have been operating under biological opinions issued in March 15, 1994 and March 14, 1994, respectively. These measures have been in place for several years and grazing operations have been adjusted through the years to accommodate the additional stipulations.

Range improvements are a necessary component of grazing management to control and care for livestock and reduce impacts to vegetation and soils from trampling. Under this alternative, there are no proposed range improvements for Rice Valley and Ford Dry Lake Allotments. A small water facility will be constructed adjacent to the West Well in the Chemehuevi Allotment. The Lazy Daisy Allotment has numerous proposed range facilities. The addition of three corrals, six water facilities with four miles of pipe, four water sites, one cattleguard, and 5½ miles of fence are expected to enhance cattle distribution. Some of these projects have been waiting for funding or approval for many years. The cost to construct these improvements is approximately \$68,210, and about 70 percent of the facilities will be completed within the short-term while the remainder will be completed within the long-term.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

The operation of the two sheep grazing leases would remain unchanged except for unknown future changes which could result from application of the National Fallback Standards and Guidelines, and evaluation of the lease areas with respect to Federal policy on proximity of domestic sheep grazing and native sheep habitat (see Appendix J). As they are, all or portions of the two leases are within the minimum distance of separation. There would be no net change in grazing use or activities under this alternative.

CUMULATIVE IMPACTS

The California Desert Protection Act established 69 wilderness areas, some of which included existing grazing allotments. Although grazing is allowed within wilderness, the restrictions regarding use of motorized vehicles, equipment and development of new range improvements have made the grazing operation more difficult for the permittees.

Changes to grazing management to meet the National Fallback standards would result in minimal positive impacts to annual and perennial vegetation for the Planning Area. Current field assessments have found that achievement of standards has not affected cattle and sheep grazing activities. Grazing operations continue to be affected by mitigation measures for listed species.

4.1.8 Wild Horses and Burro Management

From Issue 1: Standards and Guidelines

National Fallback Standards and Guidelines only apply to grazing allotments.

From Issue 2: Recovery of the Desert Tortoise

The Chemehuevi and Chocolate/Mule Mountain HMAs overlap portions of designated Category I and II desert tortoise critical habitat. However, in the overlap area the frequency of burro occurrence is low.

The Piute Mountain HA is entirely within Category I desert tortoise critical habitat and has an estimated 24 burros. As the management level is zero, the burros will be removed.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

The management of other species has little effect upon the management of wild burros. Installation of new artificial waters for bighorn sheep and deer, many of which are unfenced (do not exclude burros), may be helping to expand burros into areas/in numbers above previous levels.

From Issue 4: Wild Horses and Burros

The current management situation is very cumbersome and inefficient and promotes leadership vacuum. As a result removal of excess and nuisance burros and performing census have not kept pace with agency commitments.

CUMULATIVE IMPACTS

The CDCA Plan designated 19 wild burro HMAs in the California Desert. Since then a number of burros were eliminated from historic burro ranges and HMAs have been eliminated through plan amendments. With the passage of the California Desert Protection Act six burro HMAs were transferred to the Mojave National Preserve (National Park Service) which proposes to eliminate through land use planning.

Five HMAs would remain, although two no longer carry a viable burro population (>10 animals). Few viable HMAs remain. Of these three, one is located in the Clark Mountain area and two are in the NECO Planning Area. These two contain considerable management complexities: tortoise, bighorn sheep, other affected agencies, and dual BLM responsibilities - all of which create a ground swell for reduction/elimination.

4.1.9 Recreation Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with National Fallback Standards and managing grazing activities in accordance with the guidelines are not anticipated to appreciably affect opportunities for recreation. Non-motorized activities (e.g., hiking and horseback riding) at low levels of occurrence generally result in minor localized impacts to soils, riparian/wetland areas, streams, and native species. Although little to no data has been collected regarding such use or associated impacts, particularly within the Lazy Daisy, Chemehuevi, Rice Valley, and Ford Dry Lake grazing allotments, it is believed that non-motorized recreational activities occur at low levels with negligible impacts. During open hunting seasons for game species, the NECO Planning Area likely experiences increased levels of recreational use, but not to the degree that requirements to achieve National Fallback Standards would limit opportunities for hunting or other forms of non-motorized recreation. No actions stemming from the guidelines that limit non-motorized recreation are proposed through the NECO Plan.

Most non-motorized recreational pursuits in the California desert require the use of motorized vehicles to facilitate access. Discussion pertaining to impacts on motorized-vehicle access appears under *Issues 2, 3, and 5* (this section), and section 4.1.10 (Motorized-Vehicle Access).

From Issue 2: Recovery of the Desert Tortoise

Under this and all other alternatives, routes of travel are designated in accordance with provisions of the CDCA Plan, as amended, and the regulations at 43 CFR 8342.1. The regulatory criteria require that trails (routes) be located to minimize harassment of wildlife or significant disruption of wildlife habitats. They further require that special attention be given to endangered or threatened species and their habitats. As the desert tortoise is listed as a threatened species, route designations must ensure that tortoises and their habitats are not harassed or significantly disrupted, respectively. Where route designation decisions limit access or preclude motorized activities within designated critical habitat for the desert tortoise, opportunities for recreation may be affected.

Under this alternative, all “existing” routes of travel would be available for use except “non-routes” and “partial non-routes” which would be designated “closed”; no specific criteria in addition to those at 43 CFR 8342.1 are proposed for the protection of the desert tortoise. As “non-routes” and “partial non-routes” apparently receive little to no motorized-vehicle use, recreational activities with a motorized component would not be affected, whether the use of a motorized vehicle is the primary recreational activity (e.g., driving for pleasure) or a means of access only (e.g., transportation to a wilderness trailhead). Conversely, recreational activities of a non-motorized nature may be adversely affected concomitant with maximization of motorized-vehicle access. This is especially true where a component of the non-motorized activity is solitude and/or quietude. However, the degree to which non-motorized activities would be affected in this manner is undetermined.

Under current management, stopping, parking, and vehicle camping is allowed within 300 feet of routes, except within sensitive areas such as ACECs where the 1980 CDCA Plan limit of 100 feet applies. The rationale for changing the distance from 100 feet to 300 feet (1982 CDCA Plan Amendments Three and Forty-Nine, approved May 17, 1983) is to allow for camping in a circle, not a line. A 100-foot limitation allows for such camping by a small groups only; large groups

would require parking in a line or breaking into smaller groups under this alternative. Consequently, impacts to camping are minor for those using a single vehicle or only a few vehicles.

Generally, the quality of camping experiences relative to distances from a route are a function of traffic levels on that route. The greater the level of traffic, the greater the need to be distant from such traffic to maintain a high-quality camping experience. Traffic on routes along which most individuals would likely select for camping is generally low. Therefore, whether one camps 100 feet or 300 feet from a route in an ACEC matters little if no other vehicles pass by, especially during the night. Furthermore, few people will likely camp adjacent to such routes as the Bradshaw Trail, one of many maintained dirt roads, when numerous less-traveled side routes are available that enable campers to distance themselves from the more frequently-used routes.

Where stopping, parking, and vehicle camping occur in washes, such activities are confined within the banks of washes. In the context of motorized-vehicle access, the term “wash” is defined as a watercourse which by its physical nature permits the passage of motorized vehicles. One of these physical limitations is width. Compromising the banks of a wash in conjunction with the operation of motorized vehicles constitutes destruction of natural features, which is an illegal act. Thus, the operation of vehicles is confined to those areas within the banks of a wash throughout the NECO Planning Area (except in designated off-highway vehicle recreation areas). This limitation has not adversely affected opportunities for stopping, parking, and vehicle camping to date, nor has it constrained motorized-vehicle access.

Where traditional access is limited or precluded consequent to the route designation process, opportunities for stopping, parking, and vehicle camping are also limited or precluded. As all “existing” routes would be available for use under this alternative, except for “non-routes” and “partial non-routes,” opportunities for these activities would not be further constrained.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

There is a close relationship between the pursuit of recreational activities and motorized-vehicle use in the California desert, whether the latter is a primary constituent of the activity (e.g., driving for pleasure) or a means of access only (e.g., transportation to a wilderness trailhead). It is difficult, if not impossible in many circumstances, to engage in recreational activities in this region without employing a motorized-vehicle in some fashion. Therefore, actions which restrict vehicular access may result in adverse impacts to recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed. Under this alternative, however, all “existing” routes of travel would be available for use, except “non-routes” and “partial non-routes” which would be designated “closed”; no specific criteria in addition to those at 43 CFR 8342.1 are proposed for the management of special status animals and plants and natural communities. Therefore, adverse impacts to recreation are not anticipated.

From Issue 4: Wild Horses and Burros

Current management of wild horses and burros does not affect opportunities for recreation.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Motorized-vehicle access and the pursuit of recreational endeavors are closely linked in the California desert. Except for competitive off-highway vehicle events, impacts to recreation

consequent to managing routes of travel in accordance with the CDCA Plan, as amended, are discussed under *Issues 2 and 3* (this section).

As regards competitive vehicle events, adverse impacts to such recreational endeavors under this alternative are considered negligible. Although the “Checkchase” using the *Johnson Valley to Parker* corridor last occurred in the 1980s, interest has recently been expressed to rekindle this or a similar event. This alternative provides for such an event in the *Johnson Valley to Parker* corridor in accordance with conditions prescribed in the CDCA Plan and the *Johnson Valley to Parker Motorcycle Race EIS* (1980). Absent a change in the circumstances which led to the establishment of this race corridor, it can be assumed that permits for competitive off-highway vehicle events will be issued.

Although the CDCA Plan provides for competitive vehicle events in the *Parker 400* corridor, it is unlikely that such events would be permitted in the future given past experiences with the *Parker 400* event and similar events (e.g., Barstow-to-Las Vegas motorcycle race), and the potential for adverse impacts to the desert tortoise and its habitat. With BLM’s denial of the application to use the California loop of the *Parker 400* course in 1990, organizers moved the event in its entirety to Arizona, and have held it there since that time. There has been little interest expressed in reestablishing the event in California. Adoption of this alternative would leave intact a competitive event corridor in which no events would likely occur.

Outside the *Johnson Valley to Parker* and *Parker 400* corridors, competitive events would be allowed in accordance with MUC guidelines. Given the expanse of designated wilderness and critical habitat for the desert tortoise, it could be problematic to locate a suitable race course that avoids sensitive areas. In addition, the review process under NEPA, especially if a “may affect” determination is made relative to the desert tortoise thereby triggering consultation with the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act, could require considerable time and result in an uncertain outcome. Planning for competitive events is, therefore, difficult at best and may discourage event sponsors from pursuing a special recreation permit under these circumstances.

From Issue 6: Land Ownership Pattern

In most areas, access to private lands for recreational purposes is not restricted; landowners, most of whom do not live on their properties, generally have not posted their lands as closed to the public. As such, implicit permission is often assumed by the general public to use these lands in a manner that does not degrade their character. But as long as such lands are held in private ownership, there is potential for public exclusion from them, or at the very least, the necessity to obtain landowner permission prior to use. Such restrictions or requirements would adversely affect the public’s “freedom” of access as currently enjoyed. To the extent that private lands are acquired in some ACECs, tortoise Category I and II, and wilderness areas, opportunities for access to these lands for recreational purposes will be preserved.

Disposal of public lands will affect opportunities for recreation to the extent that public access is precluded. It is not anticipated that lands identified for disposal under this alternative would result in substantial limitations on recreational access.

CUMULATIVE IMPACTS

Increases of population in southern California and southwestern Arizona through the last half of the 20th century have been accompanied by greater demands for recreational resources, including use of what were once considered inhospitable regions of the NECO Planning Area. With these increased demands came conflicts between those who use vehicles as a means of access and those who operate vehicles as a recreational activity. Public lands once open to unrestricted vehicle travel have become increasingly more restrictive for such activities to ensure that resource values are not diminished and user conflicts are minimized.

The California Desert Conservation Area Plan (1980) established Multiple-Use Class guidelines which set the stage for managing all forms of recreational activities. While some viewed these management prescriptions as hampering their freedoms for pursuing motorized recreation, others saw them as necessary to protect resource values, thereby fostering recreational uses of a different sort. Enactment of the California Desert Protection Act of 1994 substantially changed the “playing field” once again with designation of 69 wilderness areas, 23 of which are located in the NECO Planning Area. As required by statute, casual use of motorized vehicles in wilderness is prohibited; hundreds of miles of motorized-vehicle routes were consequently closed to the casual recreationist. Among the most notable of the impacts of wilderness designation to motorized recreation was the elimination of certain segments of the East Mojave Heritage Trail, a vehicle touring route of more than 600 miles established by the Friends of the Mojave Road.

Along with restrictions on motorized-vehicle travel came limitations on where one could park and stop their vehicle, as well as where one could camp with it. Opportunities for off-highway vehicle racing have also become increasingly constrained upon listing of the desert tortoise as a threatened species. Permits for such events as the *Barstow-to-Vegas* motorcycle race and the *Parker 400* event have not been issued in California for more than 10 years. In general, activities involving the use of motorized-vehicles have become more and more limited over the last quarter century. However, it is not anticipated that further limitations of a substantial nature would occur in the reasonably foreseeable future.

Opportunities for non-motorized recreational activities of which a constituent part is freedom from the sights and sounds of the mechanized world have concomitantly increased as motorized-vehicle travel has been restricted. Although *all* forms of recreation in the California desert usually require some use of motorized vehicles—at a minimum, a vehicle is necessary to access sites for non-motorized activities—opportunities for non-motorized recreation are not substantially constrained by existing access limitations. It is not expected that opportunities for non-motorized recreation will significantly change in the coming years.

4.1.10 Motor Vehicle Access

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with National Fallback Standards and managing grazing activities in accordance with the guidelines affect motorized-vehicle access to the same degree as managing a route network consistent with the route designation criteria at 43 CFR 8342.1. In accordance with the regulatory criteria, routes and trails are to be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands, and to minimize harassment of wildlife or significant disruption of wildlife habitats. These are the same resources addressed by standards and guidelines in managing ecosystem health and grazing activities, respectively. In

applying the regulatory criteria, therefore, the parameters established to designate routes of travel substantially mimic the National Fallback Standards and guidelines.

Although motorized vehicles can reduce soils infiltration and permeability due to compaction, their use is limited to existing and approved routes of travel except in areas designated “open” to motorized vehicles and within designated wilderness where unauthorized use of vehicles is prohibited. Limiting motorized vehicle use to *non-wash* routes of travel, in particular, localizes compaction to linear areas in which such impacts to soils are generally acceptable and have already occurred. Due to the highly variable nature of *wash* routes concomitant with the variability of washes themselves, impacts to soils consequent to vehicle use can vary greatly from one wash to another. However, no specific management actions to minimize damage to soils by motorized vehicles relative to National Fallback Standards and guidelines are proposed.

From Issue 2: Recovery of the Desert Tortoise

Actions pertinent to recovery of the desert tortoise affect casual motorized-vehicle access as described under *Issue 2*, section 4.1.9 (Recreation Management). Access for *other* than casual purposes—access related to activities which require specific authorization—is addressed through the applicable permitting process. The authorized use of a “closed” route usually limits this use in some manner (e.g., number of trips, season of use, speed limits, accompaniment by a wildlife biologist, etc.) and/or requires mitigation in some form (e.g., restoration of impacts, payment of mitigation fees, etc.). Route designations, which are applicable principally to casual use, would have little to no effect on access for non-casual purposes.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Actions pertinent to management of special status species and natural communities affect casual motorized-vehicle access as described under *Issue 3*, section 4.1.9 (Recreation Management). Access for *other* than casual purposes—access related to activities which require specific authorization—would be affected in the same manner as described under *Issue 2* (this section).

From Issue 4: Wild Horses and Burros

Current management of wild horses and burros does not affect motorized-vehicle access.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Managing motorized-vehicle access in accordance with MUC guidelines established in the CDCA Plan, as amended, would affect access in the same manner as described under *Issues 2* and *3* (this section), and *Issues 2* and *3*, section 4.1.9 (Recreation Management).

Manageability:

Determining manageability of a proposed route network requires an assessment of BLM’s ability to effectively direct motorized-vehicle use to routes available for such use and away from routes on which motorized activities are deemed to cause adverse impacts. Accordingly, manageability is a function of how well pertinent rules and guidelines are communicated to the public *and* to what degree the rules are perceived as fair and reasonable. The introduction to the Motorized-Vehicle Access element of the CDCA Plan succinctly summarizes the challenge of managing motorized vehicles:

While the Bureau is responsible for vehicle use on public lands, much of the control of vehicle travel in the desert is the responsibility of the

user, whether the goal is recreational or commercial. The Bureau of Land Management does not and will not have the funds or staff to oversee vehicle use throughout the desert at all times. Therefore, rules for vehicle use must be fair, understandable, easy to follow, and reasonable if they are to be publicly accepted. Only commitment by the public, the owners of these lands, will insure success of rules and guidelines.

Are the rules understandable and easy to follow? The proposed implementation strategy identified in section 2.5 indicates the primary route network would be appropriately signed on the ground, information kiosks which depict the primary network would be installed at key locations, and printed media depicting this network would be developed and distributed to the public. It is anticipated that such an effort to communicate the rules and guidelines will be forthcoming and effective, but only if the effort is focused and continuous.

Under this alternative, the vast majority of routes currently in use by motorized vehicles would be available for continued use; the existing network of routes would scarcely be modified. Except for certain locations, compliance with the current rules and guidelines for motorized-vehicle use in the NECO Planning Area has been acceptable. It is reasonable to anticipate that these circumstances would not appreciably change with adoption of the No Action Alternative.

From Issue 6: Land Ownership Pattern

Actions pertinent to land tenure adjustments affect casual motorized-vehicle access as described under *Issue 6*, section 4.1.9 (Recreation Management). Access for *other* than casual purposes (access related to activities which require specific authorizations) is addressed through the applicable permitting process. Access across non-public lands in conjunction with authorized activities on public lands generally requires landowner permission. To the extent that non-public lands are acquired, access for both casual and authorized activities can be assured.

CUMULATIVE IMPACTS

Motorized-vehicle access and opportunities for recreation are closely linked in the California desert. The cumulative effects on motorized-vehicle access under this alternative, therefore, are the same as described in the section entitled “Recreation Management” for the No Action Alternative.

4.1.11 Mineral Management

From Issue 1: Standards and Guidelines

As Standards and Guidelines apply only to grazing management, minerals operations would not be affected.

From Issue 2: Recovery of the Desert Tortoise

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place. Mitigation, compensation, and reclamation requirements are currently imposed and increase the cost of operations and also create time delays to gaining permits.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

There would be no additional mitigation, compensation, and reclamation requirements and costs

to those already in place. Limited surveys, mitigation, disturbance avoidance, and compensation are currently required. Most species mitigation and avoidance are aimed at operations which involve cyanide and other hazardous materials, rare plants, bighorn sheep, and bats. Requirements are not consistent by place or among agencies and can create time delays.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

There would be a slight loss of access from closing non-routes which could affect casual mining activity. Authorized use of closed routes would be considered for authorized mining activities which would affect such activities to the extent of time and costs of gaining necessary authorization.

From Issue 6: Land Ownership Pattern

Some simplification of the checkerboard ownership pattern is occurring in tortoise critical habitat which could simplify legal aspects of mining rights in these areas.

CUMULATIVE IMPACTS

Over a period of several decades access to minerals has been reduced from mineral withdrawals and the cost of mining from environmental considerations has increased. The bulk of initial withdrawals created military reservations and new units to the system of national parks. Most recently (1994) was the passage of the CDPA the major effect of which created a considerable amount of new BLM wilderness areas. Until 1994 access to and availability of mineral for development on BLM lands had been set in the 1980 CDCA Plan. Environmental considerations over the past 20 years, especially due to species and habitat listings and other environmental laws, regulations, and considerations has increased costs of developing the remaining available minerals. Uncoordinated land use planning and differing agencies' mandates add additional time delays and complexities to resolve.

Examples of minerals availability (by group) reducing effects of the CDPA throughout the California Desert are as follows (% of BLM mapped mineral potential now withdrawn):

1. Construction (6 minerals): 3% to 98%
2. Industrial (24 minerals): 22% to 100%
3. Metallic (29 minerals): 45% to 90%
4. Energy (geothermal and oil/gas): 54% and 83%, respectively

This alternative would essentially not add any additional restrictions or requirements to what has already occurred through other initiatives.

4.1.12 Cultural Management

Analysis Common to All Issues:

All actions that have the potential to affect cultural resources will be reviewed in consultation with the California State Historic Preservation Office under Section 106 of the NHPA, as implemented in BLM Statewide Protocol Agreement. Under the No-Action alternative, BLM would continue to review all projects for effects to cultural resources on a case-by-case basis as part of NEPA review at the time they are proposed.

From Issue 1: Standards and Guidelines

The incorporation of National Fallback Standards and Guidelines in the maintenance and

promotion of rangeland health is an administrative action that does not qualify as an undertaking subject to review under Section 106 of the National Historic Preservation Act. There are no specific on-the-ground actions proposed in this plan for this issue. Specific actions that are carried out to meet the Standards and Guidelines may satisfy the definition of an “undertaking”, such as placement of protective devices, water troughs, seeding, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review as actions are proposed.

The application of National Fallback Standards and Guidelines should result in a positive benefit to the protection and preservation of cultural resources. The Standards and Guidelines focus on protection and restoration of soils, riparian and wetland areas, streams, and native species. These areas also tend to be associated with historic and archaeological sites. Management proscriptions that promote the restoration of natural ecosystems, such as relocating water troughs away from springs and streams, encouraging the growth of native grasses to protect soil disturbance, and reduction of continuous season-long livestock use, are also likely to result in greater protection for cultural resources.

From Issue 2: Recovery of the Desert Tortoise

The No-Action alternative will continue current MUC class “L” and ACEC designations and would continue to provide a level of protection to cultural resources by limiting and conditioning activities in those areas. Activities, such as constructing tortoise fencing along major highways and railroads might affect cultural resources, especially through the introduction of new visual elements in historic landscapes and along historic trails or highways, such as Route 66. Proposals for fencing, bridge, or culvert construction will be reviewed on a case-by-case basis in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol for cultural resources.

Grazing Management

Current range management practices will continue. Livestock behaviors can adversely affect cultural resources, including historic structures, archaeological sites and historic landscapes. The primary impact is damage to artifacts and site integrity resulting from breakage, chipping, horizontal movement, and vertical displacement of artifacts, which generally compromises the information potential about discrete utilization areas of a site. Grazing impacts are greatest in areas where cattle congregate around springs, water courses, troughs, shade zones, and salt licks.

Currently, our knowledge of cultural resources within the boundaries of the four allotments in the NECO planning area is limited (See Table 4-9). Only 160 known sites have been identified within the boundaries of these allotments and only 121 cultural resources surveys have been reported..

Table 4-9 Correlation to Identified Cultural Resources and Each Alternative.

Identified Cultural Resources Within Allotment					
Allotment	Type	No Action	Large DWMA Preferred	Small DWMA A Alternative	Small DWMA B Alternative
Ford Dry Lake (Eliminated)	Sheep	0	0	0	0
Chemehuevi	Cattle	55	0	0	30
Rice Valley	Sheep	7	7	0	7
Lazy Daisy	Cattle	45	45	27	27
ALL		97	52	27	63

Current management policy is to analyze effects to cultural resources from grazing during the NEPA review of rangeland lease renewals and would continue in the No-Action alternative. New range improvements will continue to be reviewed under Section 106 at the time they are proposed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Actions specific to the management of special status animals, plants, and natural communities, that might affect cultural resources include: land acquisition and disposal; construction, improvement, and maintenance of natural and artificial water sources; and construction of exclosures. Under the No-Action alternative, specific actions that are proposed through HMPs and other specific developments, such as installation of water guzzlers, will continue to be reviewed in accordance with Section 106 of NHPA through normal NEPA review of a proposed action.

The Ford Dry Lake domestic sheep allotment is eliminated in the No-Action Alternative. The Rice Valley domestic sheep allotment will continue to operate within current boundaries. Both allotments currently encompass 135,247 acres of land. Seven sites are recorded within the Rice Valley allotment and 53 sites are recorded in the Ford Dry Lake allotment (Table 4-10). Elimination of the Ford Dry Lake allotment will remove 49,682 acres from grazing and will eliminate the threat from grazing to the 53 known sites within the allotment. Elimination of this allotment will also have a positive benefit to the protection and preservation of cultural resources that have yet to be recorded.

Proposals for new water developments would continue to be reviewed on a case-by case basis as part of the environmental assessment. These actions will be reviewed in accordance with Section 106 during the course of normal NEPA review.

From Issue 4: Wild Horses and Burros

As with grazing, wild horses and burros can adversely affect cultural resources, especially artifacts and site integrity through breakage, chipping, horizontal movement, and vertical displacement of artifacts. Impacts are greatest in areas where herds congregate around springs, water courses, troughs, bedding areas, and shade zones.

Under the No-Action Alternative, herds will continue to be managed within the existing Herd Areas and Herd Management Areas which encompass an area of approximately 930,906 acres. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific

actions that are carried out to meet the standards may satisfy the definition of an “undertaking”, such as placement of protective enclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

Currently there 816 cultural resources identified within the existing HMAs as noted in Table 4-10.

Table 4-10 Herd Management Areas: Correlation to Identified Cultural Resources and Each Alternative.

Identified Cultural Resources Within HMA				
HMA	No Action	Large DWMA Preferred	Small DWMA A Alternative	Small DWMA B Alternative
Sites	816	399	0	403

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations

In the No-Action Alternative, designating routes on BLM lands as “open” has the potential to affect historic properties by authorizing continued motorized-vehicle use through areas that are sensitive for historic and archaeological sites. Designating a route “open” generally authorizes casual and non-competitive use of a route, including driving, parking, camping and other recreational activities within a corridor that is 300 feet on either side of the centerline of the route (600' Area of Potential Effect). In ACECs, this area may be limited to 100 feet either side of centerline (200' APE). These activities can adversely effect archaeological and historic properties ranging from inadvertent destruction resulting from ground disturbance from tires, camping, and other uses, to increased access to sensitive sites resulting in looting and vandalism of artifacts, rock art, traditional cultural properties, and other features.

There are more than 2300 miles of routes identified in the NECO planning area, of which approximately 1000 miles of routes (unmaintained dirt roads) are under review to be designated “open”. The remaining routes have been either closed for other reasons, or have been administratively opened under other authorizations (paved roads, county roads, maintained dirt roads). Given the nature and scale of this planning document, no field survey for cultural resources has been completed to specifically address the probability, nature and extent of effects to historic properties that might result from this action. Information on existing sites located in the NECO planning area was compiled from data available in the California Historic Resources Information System and in BLM cultural resources records. Information was integrated into a database for analysis using Geographic Information Systems technology. From these records, all sites falling within the APE were identified. These sites were further categorized and delineated by National Register status (either listed or formal determination of eligibility). For most sites, no formal designation was identified. For the remaining sites, each site record was examined and, based on available information, was characterized in terms of the likelihood that the site would be considered eligible. Sites were further characterized in terms of the probability that activities that would occur within the APE would be likely to adversely effect the qualities or values that would qualify the site for inclusion on the National Register.

Under the No-Action alternative, routes identified as having no known cultural resources located within the APE that are listed, determined eligible, or likely to be considered eligible, or routes

where there are no identified sites within the designated 600' wide Area of Potential of Effect, may be designated as “open”.

Routes with recorded cultural resources within the 600' wide Area of Potential Effect, where preliminary analysis indicates that the resources are not considered significant, as defined by the criteria for inclusion on the National Register, or have qualities and values that would not normally be affected by the common usages along these routes, may be designated as “open”. BLM will monitor and assess these sites on a case-by-case basis to confirm that resource conflicts do not exist or that the sites are not eligible for inclusion on the National Register of Historic Places. If after review, it is determined that these routes may have or have had an adverse effect on historic properties, BLM will close these routes or will consult with SHPO on the appropriate course of action to resolve the effect.

Routes identified as having cultural resources located within the 600' APE that are listed, determined eligible, or likely to be considered eligible for the NRHP, and for which there is a likelihood that activities in the route might adversely affect the resource, will remain undesignated until such time that the specific cultural resource and route can be assessed in the field and resource conflicts can be identified and resolved through Section 106 review.

Under the No-Action Alternative, of the more than 3,305 sites identified within the planning area, 554 have been identified as located on BLM managed lands and falling within the 600' APE for routes that are under review for “open” designation. Of these, 184 sites have either been listed, determined eligible, or are considered likely to be eligible and 167 of these sites are considered to have qualities and values that might be adversely affected by activities authorized within the 600' APE of a route. In this alternative, 284 route segments have been identified having potential conflicts with cultural resources. These segments will not be designated either “open” or “closed” pending a physical assessment of the sites and evaluation of threat that proximity to an open route might pose. If it is determined that these routes may have or have had an adverse effect on historic properties, BLM will close these routes or will consult with SHPO on the appropriate course of action to resolve the effect.

Table 4-11 Correlation of Cultural Resources to Area of Potential Effect by Alternative

	CULTURAL RESOURCES WITHIN THE APE BY ALTERNATIVE				
	No Action	Large DWMA Preferred		Small DWMA A	Small DWMA B
	All BLM Lands	Outside DWMA	Inside DWMA	Outside DWMA	Outside DWMA
Cultural Resources within APE (300')	554	444	NA*	444	460
Cultural Resources within APE (100')	NA	NA	68	NA	NA
Total Cultural Resources within APE	554	512		444	460
Eligible Cultural Resources (Estimated)**	184	138	15	138	138
Eligible Resources Potentially Affected (Estimated)	167	121	10	121	121
Undesignated Route Segments Associated***	284	89	30	89	89
Linear Mile Segments	61	17	9	17	17

* NA = Not Applicable in Alternative

** Records for cultural resources identified as located within the APE of a route subject to designation were analyzed and resources were ranked in terms of potential eligibility and vulnerability to ground disturbing activities resulting from camping, parking off-road, hiking, etc.

*** Route segments are strictly a mapping convention and do not represent the linear miles of routes that will not be designated.

Competitive Off-Highway Vehicle Events

Under the No-Action alternative, competitive off-highway vehicle events will continue to be allowed on competitive recreation routes established through the CDCA plan. Event-specific NEPA analysis is required for competitive off-road vehicle events. Race events will be reviewed on a case-by case basis. Under the No-Action alternative, BLM would continue to review all projects for effects to cultural resources on a case-by-case basis as part of NEPA review at the time they are proposed

The Johnson Valley to Parker Race Event has been previously reviewed for cultural resources effects for an EIS completed in 1980. In that assessment, the proposed route and alternatives were surveyed at the BLM Class II level (reconnaissance). Several sites, as well as archaeological “districts”, were identified along the race corridor, although the general conclusion was that site density was low along the corridor. In accordance with Section 106, the Heritage Conservation and Recreation Service (HCRS) provided comments. HCRS argued that the preferred alternative did not adequately protect significant cultural resources and that mitigation measures were inadequate to protect the proposed archaeological districts. HCRS expressed concern about the impacts to areas containing values important to Native Americans. They also noted that the reconnaissance survey provided inadequate baseline data and that predictions of resources disturbance and development of a monitoring plan would have little value. HCRS recommended that the course be completely surveyed and evaluated with the maximum impact from long term use in mind.

There are approximately 63 linear miles of competitive off-highway recreation routes in the NECO planning area. At present, there are 18 archaeological and historic sites identified as located within 300 feet of the race corridor. These sites will continue to be threatened under this alternative. These sites have not been evaluated for eligibility for inclusion on the National Register.

From Issue 6: Land Ownership Pattern

Under the No-Action alternative, adjustments to the land ownership pattern through acquisition and disposal of selected lands will continue. Lands identified for disposal will continue to be evaluated for effects to cultural resources during the environmental assessment process. No specific actions are proposed and no specific land parcels have been identified for disposal in the NECO planning effort. Specific proposals will be reviewed on a case-by-case basis. Significant cultural resources will be identified and reviewed for effects in accordance with Section 106 of NHPA.

In the process of identifying specific lands for acquisition and disposal, biological factors are the primary considerations contributing to the decision. The criteria developed for identifying lands for the protection and conservation of special status species, such as lands with springs and water sources, may also coincidentally identify lands that are also associated with historic and archaeological sites. Acquiring these lands are also likely to result in greater protection for cultural resources. However, disposal of lands identified as having low qualities for habitat does not necessarily mean that those lands also have low values or qualities for cultural resources. Many sites, especially historic mining sites and sites associated with the World War II Desert Training Center / California - Arizona Maneuver Area were located for their associations with other factors, rather than specific biological and natural features. Springs and water sources are not necessarily indicators for these types of sites.

From Issue 7: Access to Resources for Economic and Social Needs

No specific actions are identified in this alternative that would require review under Section 106 for effects to cultural resources. In general, using land use designations to develop areas of conservation emphasis for desert tortoise and other species should have a concurrent benefit in protecting and preserving cultural resources located in those areas.

From Issue 8: Incorporation of Wilderness Areas into CDCA Plan

Incorporation of the 23 Congressional designated Wilderness Areas into the CDCA plan is an administrative action not subject to review under Section 106 of NHPA. Nevertheless, the establishment of wilderness areas, while limiting ease of access and enjoyment of some cultural resources, also benefits cultural resources in limiting a broad range of activities, such as off-highway vehicles and mining, that often are in conflict with the preservation and protection of cultural resources. Designation should have a positive benefit to cultural resources as a result of increased protection and preservation.

Cumulative Impacts

In the No-Action alternative, BLM will continue to follow management prescriptions in the CDCA plan in meeting its responsibilities under the National Historic Preservation Act and its commitments under the Protocol Agreement with the California State Historic Preservation Officer. Actions that have the potential to affect cultural resources would be reviewed in consultation with the California SHPO under Section 106 of the NHPA, as implemented in

Protocol Agreement. BLM would continue to review all projects for effects to cultural resources on a case-by-case basis as part of NEPA review at the time they are proposed.

There would be an indirect benefit to the protection, preservation and management of cultural resources under this alternative resulting from the adoption of National Fallback Standards and Guidelines for rangeland health standards. There would be a direct benefit to cultural resources protection resulting from the elimination of the Ford Dry Lake range allotment.

There would continue to be direct and indirect effects to cultural resources resulting from the continued use of “undesigned” routes, which for the most part are currently open to off-highway recreational vehicle activity. Almost all of these routes have not been surveyed and the extent of cultural resources in close proximity to these routes and the nature of any effects is yet to be determined.

4.1.13 Lands and Land Use Authorizations

From Issue 2: Recovery of the Desert Tortoise

Under this alternative there would be little change to the current management practices of processing for land use application - i.e., utilities and rights-of-way. Applicable mitigation measures and compensation are currently required for new impacts to desert tortoises and its habitat according to current policy. On a case-by-case basis there may be additional costs borne by the proponent to implement other mitigation measures such as specific design features, possibly fencing and bridges and culverts when new construction projects are proposed.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Under this alternative there would be little change to the current management practices of processing application for utilities and other rights-of-way. Habitat protection for special status species will continue to help define design and mitigation requirements for lands actions. Pre-project surveys, mitigation, and avoidance are required for some species.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

There would be a slight loss of access from closing non-routes which could affect access to some private lands. Authorized use of closed routes or development of new routes would be considered for authorized actions including access to private lands where designated or existing routes are insufficient to meet needs.

From Issue 6: Land Ownership Pattern

Some simplification of the checkerboard ownership pattern is occurring in tortoise critical habitat which could simplify legal aspects of Lands actions which currently cross mixtures of public and private lands.

CUMULATIVE IMPACTS

Over a period of several decades access to and across public lands for various Lands and Rights-of-Way has been reduced due to withdrawals of public lands from the application of land laws. Permits processing and mitigation costs have also increased due to an increase in environmental issues as well. There are fewer opportunities for trans-desert transmission and pipelines as a result of military reservations, national parks, and BLM wilderness areas; however, undeveloped

portions of existing corridors should still be sufficient to absorb additional needs for the foreseeable future. Species issues will continue to increase as well. Land ownership consolidations should simplify legal aspects of access for rights-of-way and development of private lands. Uncoordinated land use planning and differing agencies' mandates add additional time delays and complexities to resolve. Beyond what is noted above this alternative would essentially not add additional restrictions or requirements to what has already occurred through other initiatives.

4.1.14 Socio-Economic Conditions

From Issue 1: Standards and Guidelines

Implementation of National Fallback standards on grazing allotments would result in minimal impact for most lessees. Increased coordination for the short-term with the BLM would directly affect all lessees. However, the two lessees with cattle operations would be affected over long-term with minor changes to current grazing activities to meet rangeland health standards. Changes in management would require additional costs for labor associated with movement and increased supervision of cattle, and over the long-term, increased costs associated with maintenance of additional range improvements. Costs associated with constructing new or replacement range improvements would have to be borne solely by the lessee or through cooperative efforts, costs could be split with the BLM, county, and other contributors to substantially or totally defray all costs. A lessee would incur increased costs for feeding or pasture if cattle are removed from a portion or all of the allotment to achieve standards. However, as rangeland health improves and resource objectives are achieved, greater benefits from more flexibility in grazing operations would be realized for the long-term.

Maintenance of standards would give the lessee greater flexibility to allow his livestock use of superior forage. Cattle operations could be negatively affected by increased public use of unique or riparian/wetland resources that have greatly improved with achievement of the standards. It is anticipated that benefits of additional revenue to the community from increased public use or visitation of these resources would offset the lessee's losses.

From Issue 2: Recovery of the Desert Tortoise

Current, socio-economic impacts to lessees that lease the Rice Valley and Ford Dry Lake Allotments would not change. There is one developed water source in the Chemehuevi Allotment. Construction of additional small water sources are proposed. Coordination with the BLM and installation of this improvement would impact the lessee. Developments proposed in Lazy Daisy Allotment would impact the lessee by increased coordination and cost associated with installation of improvements.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Current, socio-economic impacts to lessees that lease the Rice Valley and Ford Dry Lake Allotments would not change.

As there are few mitigation requirements to permits from other species, there would be little future impacts unless the sensitive status of some of these species were to change (become more sensitive or listed). Proposals for bighorn sheep/desert mule deer artificial waters would continue to be processed on a case by case basis which has proven to be costly (time) and has created a difficult to resolve tension among BLM, CDFG and other interests.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

The closing of routes that would add to routes already closed through the CDPA in 1994 would bring the total roads closed to about 18%. This would have a minor affect upon casual use access and recreation.

From Issue 6: Land Ownership Pattern

Acquisition of private lands and disposal of Federal lands to achieve a simplification of the land ownership pattern would help both manageability of Federal lands and usability of private lands. For both this is a more cost effective pattern of ownership; however, the initiative would not be completely comprehensive and strategic from a conservation point of view and would still leave a difficult to manage land ownership pattern.

CUMULATIVE IMPACTS

Implementation of this alternative continues a certain cost of doing business that is inefficient, and, while creates little near-term change, risks long-term measures which have unknown draconian socio-economic implications if more species are listed as a result of a lack of a clear strategic conservation approach to species and habitats management. The current inefficiency mainly relates to the incomplete and case by case basis of addressing the consideration of species and habitats needs: conservation, compensation, mitigation, NEPA writing, and consultation with the USFWS.

Changes to the management of grazing leases and designation of routes of travel create additional minor impacts access and use of resources.

4.2 Preferred/Large DWMA Alternative

4.2.1 Air Quality

From Issue 1: Standards and Guidelines

Adoption of the regional standards for Public Land Health, and guidelines for grazing management would be similar to the No Action Alternative. However, the Regional Standards would apply on an area-wide basis rather than just grazing allotments. This additional area could contribute to improvement to air quality at a greater rate.

From Issue 2: Recovery of the Desert Tortoise

The designation of approximately 1,684,248 acres of Federal land as ACECs would have a slight positive effect on air quality through implementation of specific management prescriptions designed to reduce surface disturbance. The Chemehuevi DWMA (ACEC) reduces the amount of grazing by 158,928 acres and designates routes as open, closed or limited. The reduction in surface disturbance would increase vegetative cover on these acres, reducing the volume of PM₁₀ emissions.

Restricting surface disturbing activities to 1% of the DWMAs potentially benefits air quality by reducing the amount of erosion and airborne pollutants such as PM₁₀. Additionally, requirements for vegetation restoration on disturbed sights will have positive benefits to air quality by adding vegetation cover.

Wildfire suppression efforts would result in reduced particulate (PM_{10}) production and visibility impairment from smoke and wind-blown dust. Short term impacts from suppression potential increase levels of particulates from surface disturbance of fire fighting equipment and operations. However, successful suppression efforts minimize the number of acres impacted as a result of vegetative cover loss.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Air quality would be enhanced by limiting future off-road vehicle activity to existing roads and trails. Competitive off-road vehicle activities are restricted to the Johnson Valley to Parker corridor and outside corridors if they meet the criteria. Competitive off-road vehicle activity has the potential to produce airborne particulate matter (PM_{10}), especially if events are conducted in areas where soils are susceptible to erosion. NECO Planning Area is in a Federal and state non-attainment area for PM_{10} and CO, events would further contribute to these pollutants.

With the deletion of Rice Valley and Ford Dry Lake Open Areas there is a positive benefit to air quality because of the reduction of airborne pollutants. Dust generated from the off-road vehicle activities at the newly designated Chemehuevi Open Area is not expected to significantly impact the area because the location is on the most easterly downwind portion of the non-attainment area.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.2.2 Water Quality

From Issue 1: Standards and Guidelines

Adoption of the regional standards for Public Land Health, and Guidelines for grazing management will generally improve water quality from natural sources similar to No Action Alternative in grazing allotments. Water resources outside of allotments would derive a slight positive effect on water quality with implementation of BMPs.

From Issue 2: Recovery of the Desert Tortoise

The designation of approximately 1,684,248 acres of Federal land as ACECs would have a slight positive effect on water quality through implementation of specific management prescriptions designed to improve water quality and reduce surface disturbance. The reduction of livestock grazing and surface disturbing activities would improve vegetative condition and consequently result in better protective ground cover and soil-holding capability. Erosion and soil loss would be reduced and water quality improved as a result of better dissipation of energy associated with storm water runoff.

Elimination of grazing on 217,873 acres would result in potential improvement in water quality at spring sources through removal of coliform bacteria contamination. There would continue to be contamination at those springs within the open parts of the allotment.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Designation of a 80 % distribution WHMA will have a small positive benefit to water quality through the implementation of specific prescriptions aimed at improving habitat condition.

Closure of routes within 1/4 mile of a natural or artificial water source will have a small positive benefit to water quality by reducing soil erosion, soil loss and sedimentation contamination.

Improving vegetative conditions on Natural Communities such as springs and seeps, dunes and plays and microphyll woodland would have a positive benefit to water quality by improving protective ground cover and soil holding capability. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized improving water quality.

From Issue 4: Wild Horses and Burros

Some water resources outside the designated HMAs may benefit from the reduced burro activity. Water resources can be impacted through soil compaction and the reduction of vegetative and litter cover that reduces infiltration and increases storm water runoff and sedimentation. Additionally, the water quality at some springs would be expected to improve with the removal of burros from the reduction of coliform bacteria contamination.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.2.3 Soil Quality

From Issue 1: Standards and Guidelines

Adoption of the regional standards for Public Land Health, and guidelines for grazing management are similar to the No Action Alternative where grazing continues. Implementation of standards throughout the Planning Area would result in a slight positive benefit to soil quality.

From Issue 2: Recovery of the Desert Tortoise

The designation of approximately 1,684,248 acres of Federal land as ACECs would have a slight positive impact on soil quality through implementation of prescriptions aimed at improving habitat conditions and reducing impacts from surface disturbing uses.

Reducing grazing activities on 217,873 acres would result in slight improvement in soil quality primarily through reduction of removal of vegetative and litter cover which protects the soil from erosional processes. In addition, there would be a slight improvement in soil permeability around springs and seeps which would reduce soil loss through storm water runoff.

Soil disturbance would occur with the development of range improvements in the Lazy Daisy Allotment. Under this alternative, there would be construction of 18 miles of fence, 4 miles of water pipe, 3 cattleguards, 6 water facilities, and 4 water sites within the allotment to improve cattle distribution and to meet standards. There would be a significant impact to soils from compaction and disturbance during installation of fence, springs, pipeline, corrals, wells, and cattleguards. Compaction and disturbance of soil are expected when hauling equipment, materials and personnel to work site. Impacts to soils are expected to recover during the short-term. Some impacts from compaction would be offset when cattle modify current trailing to new facilities. Cattleguards placed along a fence in the road would result in negligible impacts to the surrounding soil.

Limiting surface disturbing activities to one percent inside the DWMA's could have a positive

impact on soil quality. Activities which cause the vegetation cover and litter to be diminished leave soils vulnerable to both water and wind erosion particularly if the activity occurs within areas with highly susceptible soils.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Designation of a 80 % distribution WHMA will have a small positive benefit to soil quality through the implementation of specific prescriptions aimed at improving habitat condition.

Improving vegetative conditions on Natural Communities such as springs and seeps, dunes and plays and microphyll woodland would have a positive benefit to soil quality by improving protective ground cover and soil holding capability. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized.

From Issue 4: Wild Horses and Burros

Reducing the Herd Management Areas by () acres may have a positive benefit to soil quality through the preservation of vegetative cover and resultant decrease in erosion and soil loss. Burros will continue to graze on the Chemehuevi HMA and the Chocolate/Mule Mountains HMA which may result in continued impacts to soil quality from reduction of vegetative and litter cover that protects the soil from erosional processes and, and to some degree, soil compaction which channels and concentrates storm water runoff.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Soil quality would be improved by limiting future off-road vehicle activity to existing roads and trails. Competitive off-road vehicle activities are restricted to the Johnson Valley to Parker corridor and outside corridors if they meet the criteria. Competitive off-road vehicle activity has the potential to impact soil resources through disturbance of soils which leave them vulnerable to soil erosion.

With the deletion of Rice Valley and Ford Dry Lake Open Areas there is a positive benefit to soil quality because of the reduction of soil disturbance. The soil resource is expected to benefit through the preservation of areas presently undisturbed.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.2.4 Vegetation Management

From Issue 1: Standards and Guidelines

General Vegetation: Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative inside grazing allotments. Management of soil and vegetation resources are expected to improve slightly as non-compliance areas begin to meet standards.

Biological Soil Crusts: Slight improvement may be seen in areas where grazing use has been canceled, otherwise impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative for areas that are grazed.

Riparian/Wetland: Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative. Cancellation of the northern and eastern portions of the Lazy Daisy Allotment would positively affect riparian/wetland areas in those areas.

Noxious Weeds: Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

Trends and conditions for vegetation outside allotments would continue from implementation of standards.

From Issue 2: Recovery of the Desert Tortoise

The effects on natural communities, ecosystem processes, and special status plants in the Preferred/Large DWMA Alternative are similar in nature to the impacts described for the No Action Alternative, but are reduced somewhat based mostly on the establishment of DWMA's where some uses are restricted. Specific differences in impacts between the Preferred/Large DWMA Alternative and the No Action Alternative are described below.

Natural Communities

Managing 1,684,248 acres of DWMA would enhance natural communities by increasing the amount of each community inside an area of protection. Table 4-12 shows the acres and percent of each natural community within the DWMA. The DWMA's can augment the portions of each natural community that are in JTNP, CMAGR, and BLM wilderness.

Table 4-12. Acres and percent of total of each natural community within large DWMA's.

Natural Community	DWMA's
Sonoran Desert Scrub	1,139,072 (30)
Mojave Desert Scrub	230,903 (29)
Desert Dry Wash Woodland	312,556 (46)
Mojave Pinyon/Juniper Woodland	
Desert Chenopod Scrub	
Playas	1,142 (1)
Springs and Seeps (no. of sites)	38 (27)
Sand Dunes	

DWMA's will receive added protection from the limit of 1 percent on new surface disturbance. Although projected levels of new surface disturbance are below 1 percent, the limitation shows an agency commitment. The prohibition on disposal of lands in the DWMA's together with continued acquisition of private and State lands will provide additional safeguard against surface disturbance.

Grazing would be excluded from the highest density tortoise habitat in the Lazy Daisy Allotment and the Chemehuevi Allotment would be deleted in this Alternative. Comparing Table 4-13 to Table 4-21 shows that more lands will be grazed than in the Small DWMA A Alternative (grazing

excluded from DWMAs), but the additional grazed lands fall mostly in Sonoran Desert Scrub and Mojave Desert Scrub which are the most common and least sensitive natural communities. The amount grazed is less than in the No Action Alternative, mostly in these two natural communities.

Elimination of grazing would increase above-ground biomass with plant reproductive capability maintained or enhanced. The health of mature plants would be maintained or improved. Abundant immature plants would successfully become established, increasing litter potential for soil stabilization.

Improved grazing management practices through implementation of the Standards and Guidelines will result in reduction of damaging impacts from cropping associated with year-long livestock grazing. An increase in canopy cover and plant vigor is expected. If grazing use exceeds established levels, livestock would be removed or moved to another part of an allotment. In the long term, under properly managed rangelands, species diversity and ecological condition should be maintained or improved.

This alternative would provide for the orderly deletion of the Lazy Daisy allotment upon request of the lessee. This is intended to allocate the land to tortoise conservation upon request; this would be expected if a conservation organization purchased the allotment base property.

Table 4-13. Acres and percent of total of each natural community within BLM cattle grazing allotments: Lazy Daisy Cattle.

Natural Community	Lazy Daisy Cattle
Sonoran Desert Scrub	98,482 (3)
Mojave Desert Scrub	207,450 (26)
Desert Dry Wash Woodland	3,378 (<1)
Mojave Pinyon/Juniper Woodland	1,928 (100)
Desert Chenopod Scrub	
Playas	
Springs and Seeps (no. of sites)	16 (11)
Sand Dunes	
All NECO lands	311,279 (6)

Ecosystem Processes

Ecosystem processes will be improved as habitat disturbance reduced is by protective measures and rehabilitation projects. Raven management efforts are aimed at bringing raven predation to natural levels. Various measures to reduce surface disturbances will aid in combating the spread of exotic species. Notwithstanding these measures, the import of nutrients through smog from urban areas may increase the competitiveness of some weedy species over a wide area.

Special Status Plants

The various conservation benefits described in sections 2.2. and 2.3 for the Conservation Zone

would also benefit all but three special status plants (Howe's hedgehog cactus, Wiggin's cholla, and White margined beardtongue) to a very high degree as shown on Table N-12 Appendix N. These three plants would still be protected outside the Conservation Area, but the protection may be more difficult given the management context.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Impacts and potential impacts from OHV use of Ford Dry Lake and Rice Valley Open Areas will be eliminated.

Tamarisk removal will receive additional emphasis in rare and sensitive natural communities. Although vegetation harvesting will not be allowed (except for salvage), the amount and effects of this activity as generally administered are very low

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Benefits and impacts related to LTVAs is the same as for the No Action Alternative.

Elimination of the *Parker 400* and the MUC criteria for new race routes would eliminate all impacts associated with such events anywhere in the Planning Area except for the Johnson Valley route, which would remain designated. Impacts described in the No Action Alternative generally apply, but stipulations listed in section 2.5 would mitigate them somewhat. The alignment of the course is in relatively low value habitat and has no serious proximity to special status plant species.

CUMULATIVE IMPACTS

General Vegetation

Effects on general vegetation will be similar to the No Action Alternative except for the following items.

Vegetation communities will benefit from the designation of DWMAs and the associated conservation measures. CDCA special management areas, proposed to be deleted, are completely or largely absorbed into a complex of management areas called the Conservation Zone (Table O-7 Appendix O).

Reductions in burros will improve vegetation resources, especially riparian vegetation around springs and seeps. Elimination of grazing from the Rice Valley, Ford Dry Lake, and Chemehuevi Allotments may improve vegetation slightly; however, grazing is light and only occasional in these allotments.

The designation of routes and reduction in the route network will reduce route proliferation and reduce the rate of spread of alien plants along route corridors. Closure of three dunes and two playas to OHV use will aid in restoration of vegetation communities in and around them. Restrictions on parking and camping to 100 feet of open routes will reduce vegetation crushing by vehicles in these activities.

Compensation for disturbance of Desert Dry Wash Woodland, Desert Chenopod Scrub, Sand Dune, and Playa communities may deter disturbance. Enhancement of vegetation at springs and seeps will benefit vegetation in localized sites.

Special Status Plants

Effects on special status plants will be similar to the No Action Alternative except for some benefits that will result from reduced uses and increased protection as described for general vegetation.

Biological Crusts

Effects on biological crusts will be similar to the No Action Alternative except for some benefits that will result from reduced uses and increased protection as described for general vegetation.

Riparian/Wetland

Effects on riparian and wetland areas will be similar to the No Action Alternative except for some benefits that will result from reduced uses and increased protection as described for general vegetation.

Noxious Weeds

Effects of noxious weeds will be similar to the No Action Alternative except that the reduction in disturbance and the reduction in route network as described for general vegetation will reduce the potential for invasion of noxious weeds.

4.2.5 Wildlife Management

From Issue 1: Standards and Guidelines

The effects of the Preferred Alternative will be similar to the No Action Alternative, however, since the guidelines are stronger and more definitive in the Preferred Alternative, greater benefits for wildlife communities can be expected.

From Issue 2: Recovery of the Desert Tortoise

Desert Tortoise

The establishment of the Chuckwalla DWMA and Chemehuevi DWMA constitute a major change in the planning environment for BLM lands and CMAGR. The establishment of the Joshua Tree DWMA will not change management in JTNP to the same degree. The BLM desert tortoise habitat category map will change to correspond to the DWMAs. Restrictions and management policies in the tortoise Rangeland Plan and Statewide Plan for Category I will be applied to the DWMAs. At a future date, it is anticipated that USFWS will change critical habitat to correspond to the DWMAs.

Most of the benefits from this issue arise from establishment of the DWMAs and management actions proposed for the DWMAs. The Chemehuevi and Chuckwalla DWMAs cover 886,578 and 797,670 acres, respectively. Table 4-14 shows the size of each DWMA and the amount and percent of critical habitat included in the DWMAs. The percent of critical habitat in all DWMAs is about 76 percent in this alternative. Both DWMAs are considerably above the minimum size recommended in the Recovery Plan. BLM desert tortoise habitat would be changed to correspond to the DWMAs.

Table 4-14 Desert Tortoise and large DWMA's

Desert Tortoise	Chemehuevi DWMA	Chuckwalla DWMA	JTNP, CMAGR, wilderness, DWMA's
Total size	888,636	798,338	
Critical Habitat (%)	813,200 (35)	785,550 (34)	1,778,532 (76)

In all alternatives (except No Action) habitat restoration efforts would be increased, public education would be enhanced, and mechanisms for improved interagency cooperation would be established. All of these would benefit desert tortoise directly or indirectly.

Overall, surface disturbance in DWMA's would be reduced by limitations on and tracking of new disturbances. Although new surface disturbances are not to reach this level for decades, the commitment will ensure that disturbances are minimized, that new disturbances are recorded, and rehabilitation is given a high priority. Fixing compensation at 5:1 in Category 1 (i.e., DWMA's) would not be a significant change from the current formula.

The elimination of grazing from the highest density tortoise habitat would relieve the effects of tortoise and burrow trampling and forage competition. The last is most likely to occur during years of low rainfall when cattle may eat scarce annual forage. In addition vegetative cover would improve as the plants are not cropped. Some grazing of DWMA and critical habitat would continue, but it would be the least important habitat for tortoises. The elimination of the Chemehuevi Allotment would have only slight benefit because the allotment is only rarely grazed and very lightly then. Restrictions on ephemeral authorizations and grazing in tortoise habitat in years of low annual production (i.e., less than 230 lbs./ac.) would reduce competition for annual forage. Other grazing restrictions measures would further reduce tortoise mortality or forage loss.

The fencing of Interstate Highway 10 and 40 through or alongside DWMA's and portions of State Highway 95 will reduce tortoise run-over mortality greatly and allow natural restoration of depleted populations along these highways. The negative effects of population fragmentation on population genetics will not be significant for more than a century due to the long tortoise generation time. The small amount of interchange needed for genetic viability will presumably be satisfied by movements under bridges and through culverts. The reduction in all wildlife deaths (especially snakes, lizards, rodents, and rabbits) will also reduce raven food supplementation and hence mortality of hatchling and juvenile tortoises.

Closing some roads following the criteria noted in section 2.5 will benefit the tortoise through reduced vehicle mortality and illegal collection. The proposed "open" road designations would result in 22 miles per township (36 sections) for the Chemehuevi DWMA and 28 miles for the Chuckwalla DWMA - not counting areas of "open" washes systems.

The closure of washes to vehicles in some areas of the DWMA's will reduce tortoise mortality and crushing of burrows. However, there will remain substantial areas of DWMA where washes remain open for vehicle use. Tortoises commonly use the banks of washes for burrowing.

The removal of ravens known to prey on tortoises would reduce tortoise mortality and aid in recruitment of young into the population. This is especially important in populations reduced by

disease.

Bighorn Sheep

In this Alternative the 1,684,248 acres of designated DWMA cover 26% of the range of bighorn sheep. Table 4-15 shows the acres and percent of range of bighorn sheep in the two DWMA. Furthermore, in the Preferred/Large DWMA Alternative there is a limit of 1 percent on new surface disturbing activities. Most of this is likely to be on BLM-administered lands that are not in designated wilderness. Possible positive effects from this limit on surface disturbance include: commitment from the BLM to limit the amount of surface disturbance inside DWMA, creating an incentive for projects to locate outside DWMA and creating a GIS data base to tract disturbances.

Table 4-15 Acres and percent of area for three categories of bighorn sheep use in the Chuckwalla DWMA, Chemehuevi DWMA.

Bighorn sheep use categories	Chemehuevi DWMA	Chuckwalla DWMA
Occupied Range	186,327, (11)	269,384 (16)
Unoccupied Former Range		1,855 (1)
Movement Corridor	223,975 (37)	26,093 (4)

The effects of reducing cattle grazing by 34% include a reduction in competition for forage; decrease in vegetation composition alternation; lower frequency of diseases; and an improvement in water quality at water sources. Table 4-16 shows the acres and percent of bighorn sheep range within the two cattle allotments. The table shows that the acres of bighorn sheep range within cattle allotments is nearly the same as the No Action Alternative.

Table 4-16. Acres and percent of area for three categories of bighorn sheep use within the two cattle allotments..

Bighorn sheep use categories	Lazy Daisy Cattle	Chemehuevi Cattle
Occupied Range	125,411 (7)	2,643 (<1)
Unoccupied Former Range		
Movement Corridor	105,438 (18)	60,976 (10)

Other Special Status Animals

Designation of 1,684,248 acres of DWMA will have direct benefits to many special status animals through the implementation of prescriptions aimed at improving habitat conditions and reducing surface disturbing activities. Table N-8 shows the acres and percent of the range of each special status animal within the larger proposed DWMA.

Limiting surface disturbing activities to 1% of the DWMA will have a positive impact on many species by potentially reducing impacts from habitat reduction. Most projected disturbance is likely to be on BLM-administered lands that are not in designated wilderness. Increased coordination on planning and implementation of the NECO Plan through the Desert Managers Group and annual NECO Cooperator's meeting will improve management effectiveness.

Positive impacts resulting from the closure of washes to vehicle travel include a reduction in the destruction of vegetation along banks where vehicles travel out of the wash bottom. Additionally, an improvement in the stabilization of the bank may be seen. Long term disturbance from vehicle travel can include; loss of topsoil; loss of water-storage capacity of soil and permeability due to soil compaction; and increased occurrence of exotic plant species. The inclusion in the DWMA of an area where navigable washes are open (Map 2-10 Appendix A) would reduce the overall positive benefits compared to the Small DWMA A Alternative for special status animals. Table N-10 Appendix N shows the acres and percent of the range of special status animals that are in the combined open wash areas in the DWMA's.

Eliminating cattle grazing from the areas of highest desert tortoise density will result in little net change for special status animals.

The fencing of 208 miles of highways would alter the barrier effects of linear transportation corridors. More specifically, passage of most rodents, lizards, small snakes, and tortoises would be greatly reduced. The spacing of gaps (i.e., culverts, bridges) would be critical in the maintenance of minimal gene flow. In some cases, culverts and/or bridges might be added as the fencing is installed during highway or roadway upgrade. Passage of other animals (carnivores, birds, bats, larger snakes) would likely not be affected greatly. The fencing would significantly reduce the mortality of rodents, lizards, small snakes, and tortoises; however, most of these species, except notably desert tortoise, have a reproductive capacity which can overcome this localized mortality.

From Issue 3: Management of Special Status Animals and Plants and Natural communities
Bighorn Sheep

Impacts are reduced somewhat based on the establishment of two bighorn sheep WHMA's consisting of all "occupied habitat," "movement corridors," and "Unoccupied former range". Various bighorn sheep management actions are proposed specifically for the bighorn sheep WHMA's. Specific differences in impacts between No Action Alternative and the Small DWMA A Alternative are described below.

Table 4-17 shows the acres and percent for the two bighorn sheep WHMA's. A total of 23 percent of the occupied range lies within the proposed DWMA's; some of this includes BLM wilderness as shown in Table 4-1 for the No Action Alternative.

Table 4-17. Acres and percent of area for bighorn sheep WHMA's.

Bighorn sheep use categories	Bighorn WHMA's
Occupied Range	1,716,132
Unoccupied Former Range	232,282
Movement Corridor	601,327

Benefits of designation of the Multi-Species WHMA are similar to those described for natural communities. In addition, lands will be acquired in the conservation zone, reducing the likelihood of surface disturbing development.

The deletion of all bighorn habitat management plans would have no significant effect because the actions in the HMPs are fully implemented and the actions proposed herein provide more protection and enhancement of habitat.

Specific actions addressing bighorn sheep will benefit the metapopulations overall. The acquisition of lands will protect against adverse development on private lands. The fencing of potential hazards to bighorn sheep will decrease mortality from accidents. Elimination of the five existing bighorn sheep HMPs will have little effect as the NECO Plan replaces the measures in these plans. Annual CDFG survey flights and time-lapse cameras at water sites (some being done now) will improve the capability for adaptive management. Improved coordination on public education, research, and monitoring will improve management capabilities.

The proposed augmentation of six demes in all the alternatives will aid in ensuring stability of individual demes and, thereby, viability of the metapopulation on a whole. Similarly reestablishment of three lost demes in the *Sonoran Metapopulation* will give a greater number of demes and, thereby, increase viability of the metapopulation. The elimination of domestic sheep within a nine-mile buffer zone around existing or reestablished demes will guard against disease transmission (nose-to-nose or gnat-borne) and an epidemic that could decimate the reestablished deme as well as nearby demes.

The addition of 87 new water developments (Map 2-19 Appendix A) for the Sonoran Bighorn Sheep Metapopulation (29 for bighorn sheep only and 58 for burro deer and bighorn sheep dual use) will provide a greater distribution of bighorn sheep within the "occupied range." That is, the installation of new waters will give access to additional forage more distant from existing waters. With more food and water available (i.e., accessible), the number of bighorn sheep in each deme can be expected to increase, to the extent that other essential habitat features (e.g., escape terrain, thermal cover) are available. Increased population size will increase the viability of individual demes and, thereby, the metapopulation as a whole. Comparing an artificial water site to a dry site, Cutler and Morrison (1998) found that rodent and reptile populations were affected little, but bird and amphibian abundance and species richness were higher at the watered sites.

The need for drinking water and the utility of artificial water developments has been the focus of some research and much contention in land management in recent years. McCarty and Bailey (1994) review some of the literature on bighorn sheep need for and use of drinking water. Andrew *et al.* (1999) found that in a study area in the southeast corner of the NECO Planning Area a population of bighorn sheep experienced a severe drought between 1995-1998. During this time, isolated water sources dried up and access by bighorn sheep to the Colorado River was severely restricted. The bighorn population declined during this time from about 160 to less than 50. They concluded that drinking water sources were a necessary habitat feature in the study area.

Water developments will be designed as generally described in Appendix M. No new waters are proposed at this time for the Southern Mojave Bighorn Sheep Metapopulation.

Closure of some routes near natural or artificial water sources will reduce disturbance of bighorn sheep at critical sites. Jorgensen (1974) found that a desert water source was used 50 percent less on days with vehicle traffic.

Burro Deer

The addition of 108 new water developments (Map 2-19 Appendix A) for burro deer (50 for deer only and 58 for deer and bighorn sheep dual use) will provide for a larger distribution of deer within their range, especially for does and fawns which stay closer to water. That is, with the addition of new waters, there will be greater access to additional forage more distant from existing waters. With more food and water available (i.e., accessible), the number of deer can be expected to increase. Increased population size will increase the overall deer population viability. Burro deer will receive added protection from route closures near water development.

Other Special Status Species

Benefits of designation of nine Multi-species WHMA are similar to those described for natural communities. In addition, project related inventories for special status animals will occur in the conservation zone resulting in additional information on the distribution and habitat use of special status animals. Lands will be acquired in the conservation zone, reducing the likelihood of surface disturbing development.

The deletion of Milipitas Wash habitat management plans and Chuckwalla Bench ACEC would have no significant effect on special status animals because the actions proposed herein provide more protection and enhancement of habitat.

Bat gates constructed on caves and shafts where bats might be harmed would give needed protection against disturbance at critical sites. The withdrawal from mining of some large bat roost sites would prevent destruction from mining. Route closures near some significant bat roosts would reduce the likelihood of disturbance at a critical site.

Prairie falcon and golden eagle eyries would receive some protection from route closures and mining and other disturbances. Increased monitoring of eyries will aid in preventing disturbance. Elf owl habitat at Corn Springs will be enhanced by improvements to habitat and removal of European starlings. Burrowing owls will be aided by a seasonal restriction on projects during the breeding season.

Couch's spadefoot toad will receive additional protection from mitigation measures, permanent fencing where necessary, and closure of some routes near habitat. Compensation requirements at 3:1 will discourage surface disturbance in Desert Dry Wash Woodland and aid in habitat acquisition for Couch's spadefoot toad.

Closures of certain dunes will protect sensitive and scarce habitat for Mojave fringe-toed lizard. Compensation requirements at 3:1 in Sand Dunes will discourage surface disturbance in dunes and aid in habitat acquisition. The removal of sheep grazing allotments, if and when it occurs, will slightly benefit dune species such as Mojave fringe-toed lizard in the Rice Valley and Ford Dry Lake Allotments.

Ford Dry Lake and Rice Valley Open areas would be closed which would further reduce impacts to wildlife.

A compensation requirement of 3:1 in Desert Dry Wash Woodland will aid riparian-obligate species by discouraging development and aiding in habitat acquisition.

Closure of some routes will reduce the amount of habitat subjected to occasional disturbance from vehicles, especially for the target species of the closures. Routes were reduced with special consideration for California leaf-nosed bat maternity and hibernation roosts, other significant bat roosts, prairie falcon and golden eagle eyries, Couch's spadefoot toad habitat, and deer watering sites. Table N-9 shows the resulting number of miles of road per square mile in the range of each special status animal; these numbers do not include navigable washes in areas where they may be driven. The average number of miles per square mile is 0.6 for the Planning Area. The route density is highest in the range of burro deer, Gila woodpecker, and yellow warbler. Navigable wash areas are found within the range of these species, also.

From Issue 4: Wild Horses and Burros

Desert Tortoise

Eliminating burro grazing inside DWMA's will have a positive effect on tortoises over the long term by reducing competition for forage and trampling of vegetative cover. Areas with past overgrazing would be allowed to recover which would increase the amount of forage and cover for desert tortoise and other wildlife.

Bighorn Sheep

The negative effects of burros on bighorn sheep would be reduced somewhat by the fencing of 1/3 of the natural waters within occupied range. Some of the additional waters fenced for deer (1/3 of natural waters) might be in occupied range also or in movement corridors. Cleary (1973) showed that burros can be excluded from a water source and forced out of an area by fencing the water sources. Protective fencing will likely be according to the design described by Andrew *et al.* (1997). Additionally, negative impacts such as competition for forage, damaging water sources, trampling of soil and denudation of vegetation would be expected to decrease as burro grazing was reduced. The maintenance of burro HMAs (Table 4-18) would be significant compared to the Small DWMA A Alternative where burros are eliminated. The acres and percent of bighorn sheep range within burro HMAs would be significantly lower than the No Action Alternative, also. The percent of occupied range within HMAs would decrease from 19 percent to 11 percent. The percent of movement corridors within HMAs would decrease from 17 percent to 11 percent.

Table 4-18. Acres and percent of area for three categories of bighorn sheep use within burro herd management areas.

Bighorn sheep use categories	Chemehuevi HMA	Chocolate/Mule Mts.. HMA
Occupied Range	68,631 (4)	118,123 (7)
Unoccupied Former Range	0	11,989 (5)
Movement Corridor	20,562 (3)	49,956 (8)

Burro Deer

The impacts on burro deer would be similar to those described for bighorn sheep.

Other Special Status Species

The maintenance of burro herd management areas would be significant compared to the Small DWMA A Alternative where burros are eliminated. Five special status animal species would

have more than 10 percent of their range in a burro HMA (see Table N-7 Appendix N).

The negative effects of burros on some special status animals, and burro deer in particular, would be reduced somewhat by the fencing of some of the natural waters for benefit of bighorn sheep or burro deer.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Designating routes of travel as “open,” “limited,” and “closed” will result in a decrease in impacts associated with off-road activities, such as habitat degradation, proliferation of roads, harassment of wildlife and road kills. Discussion in section 4.2.4, Issue 5 (roads and competitive events) applies here as well.

The nature of benefits and impacts described in section 4.2.4, Issue 5, apply to wildlife as well.

Analysis of Table n-10 Appendix N indicates that miles of roads in wildlife habitats is relatively low. Burro deer, Gila woodpecker and Yellow warbler have the highest roads presence at 1 to 1½ miles per section.

CUMULATIVE IMPACTS

General Wildlife

Effects on general wildlife will be similar to the No Action Alternative except for the following items.

General wildlife will benefit from the designation of DWMA's and the associated habitat conservation measures. For example, the elimination of the Chemehuevi Allotment and portions of the Lazy Daisy Allotment within the DWMA will reduce trampling of animal burrows and competition for forage with wildlife species. The fencing of highways will reduce roadkill mortality for many mammals and reptiles. Reductions in burros will improve conditions for wildlife, especially migrating songbirds and bats and resident wildlife that use springs.

Various measures that target special status animals will also benefit animals in the same habitat. For example, swifts, swallows, owls, ravens, and other cliff dwelling birds and mammals will benefit from measures protecting raptor eyries.

A raven reduction program will reduce predation by ravens on other wildlife species, if any, that may be receiving unnatural levels of predation by ravens.

The designation of routes will provide increased protection against habitat disturbance and other negative effects of human activities in an area. Closures of routes near springs and seeps and habitats of various special status animals will also reduce vehicle-related effects. The closure of three Sand Dune communities and two Playas will also benefit general wildlife populations in these rare habitats. Reductions in camping and parking off of routes from 300 feet to 100 feet will reduce vehicle destruction of microhabitats used by wildlife in the vicinity of routes.

Desert Tortoise

Effects on tortoise will be similar to the No Action Alternative except for the following items.

Tortoise conservation will benefit from the designation of three large DWMA's. This alternative

has the largest DWMA size. Management policies associated with BLM's Rangewide Tortoise Plan and California Statewide Tortoise Management Policy (as applied through desert tortoise habitat Categories) will be retained.

Eliminating the Chemehuevi Allotment and reducing the Lazy Daisy Allotment will reduce trampling of tortoises and burrows and eliminate competition for forage, if any. Improved management of burros will aid in restoration of some damaged tortoise habitat.

Fencing of Interstate and State highways will reduce tortoise mortality and allow the reestablishment of populations along these highways. Reductions in roadkills of other wildlife (especially small mammals and reptiles) will reduce raven food, raven populations, and tortoise hatchling predation. In addition, a comprehensive raven predation control program will reduce excessive predation by ravens on hatchling and juvenile tortoises.

The designation of routes will provide increased protection against habitat disturbance. Reductions in the route network will reduce tortoise roadkills and other negative effects of human activities in an area. Reductions in camping and parking off of routes from 300 feet to 100 feet will reduce tortoise run over and burrow destruction off of routes.

Other Special Status Animals

Effects on other special status animals will be similar to the No Action Alternative except for the following items.

Special status animals will benefit from the designation of DWMA's and the Multi-species WHMA and the associated conservation measures. Measures targeted at specific special status animals or habitats will benefit these species directly.

Elimination of the Ford Dry Lake and Rice Valley allotments will give added protection against disease for nearby bighorn sheep populations. Construction of 87 new artificial water sites for bighorn sheep and 50 for burro deer will provide access by these species to large areas of usable range. This will result in an increase in size and stability of the bighorn sheep demes and the burro deer population. The allocation of natural waters to burros, bighorn sheep, and burro deer will aid in conserving bighorn demes. Reestablishing three lost bighorn sheep demes will aid in ensuring metapopulation viability.

4.2.6 Wilderness Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with Regional Standards, which pertain to soils, riparian and wetland areas, stream function, native species, and water and air quality, and managing grazing activities in accordance with the specified regional guidelines would benefit wilderness resources in the same manner as described for the No Action Alternative (see *Issue 1*, section 4.1.6).

From Issue 2: Recovery of the Desert Tortoise

Whereas motorized vehicles are prohibited in wilderness except as authorized by the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans, the extent to which unacceptable impacts to wilderness resources occur consequent to

motorized-vehicle travel is proportional to the manner and degree of *unauthorized* incursions into wilderness areas. Under this alternative, motorized-vehicle access to wilderness boundaries would be somewhat reduced relative to the No Action Alternative with establishment of “washes closed zones” in DWMA’s to protect the desert tortoise (see section 2.2) and application of biological parameters for the management of special status animals and plants and natural communities (see section 2.3). As opportunities for access to wilderness boundaries are reduced, the potential for unauthorized incursions into wilderness is concomitantly decreased. The extent to which such incursions are anticipated is undetermined.

Elimination of grazing in the Lazy Daisy allotment where the highest density tortoise habitat occurs would likely enhance natural conditions within portions of the Old Woman Mountains and Turtle Mountains Wilderness Areas. Natural systems would be more likely to freely function absent the grazing of cattle. If the lessees voluntarily relinquish all grazing use authorizations for the Lazy Daisy Allotment and no other grazing authorizations are approved for it, natural conditions would likewise be enhanced within portions of the aforementioned wilderness areas. In general, management actions that move a wilderness from its existing condition to one of less human influence within legal constraints would benefit wilderness resources.

Changing the “perennial/ephemeral” designation of the Lazy Daisy Allotment to “perennial only” would reduce the frequency of grazing in the Old Woman Mountains and Turtle Mountains Wilderness Areas, thereby reducing the impacts of grazing to the free functioning of natural systems. Terminating the Chemehuevi Allotment would likewise allow natural systems in the Chemehuevi Mountains Wilderness to more freely function where cattle had once grazed.

None of the actions specific to recovery of the desert tortoise as proposed in the NECO Plan under this alternative are anticipated to adversely affect wilderness resources. In general, such actions would likely benefit wilderness resources to the degree that natural conditions would be preserved, and plant and animal diversity would be protected. Site-specific projects to facilitate recovery of the desert tortoise would require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

The effects of applying “biological parameters” in the management of motorized-vehicle access would be the same as discussed under *Issue 2* (this section).

Actions that maintain or enhance populations of special status animals and plants, and preserve or restore natural communities would have no effect on, or may benefit wilderness resources to the degree that natural conditions would be preserved, and plant and animal diversity would be protected. Site-specific projects would require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

Of particular concern is the proposal to construct new water developments to expand usable habitat for bighorn sheep (see section 2.3). Expansion of usable habitat has been identified as an important component of a conservation strategy to ensure long-term viability of the Sonoran

Desert and Southern Mojave Desert Bighorn Sheep Metapopulations.

Under this alternative, 24 new guzzlers for use by bighorn sheep would be constructed in wilderness areas within the NECO Planning Area to ensure viability of the Sonoran Desert Bighorn Sheep Metapopulation (see Map 2-19 Appendix A; proposed sites are mapped as *general* locations). Clearly, wildlife water developments may be constructed in wilderness under certain circumstances (see section 3.6, Wilderness); such developments are not categorically defined as nonconforming uses. Although construction of facilities to enhance an area's value for wildlife is not consistent with the free operation of natural processes, such measures may be necessary for the continued existence or welfare of wildlife living in wilderness, particularly in the case of species adversely affected by human activities. Permanent installations to maintain conditions for wildlife may be permitted:

- if the resulting change is compatible with preserving wilderness character;
- if the resulting change is consistent with wilderness management objectives for the area; and
- if they are the minimum necessary to accomplish the task.

Preservation of wilderness character:

The following characteristics are identified in the Wilderness Act to define and describe a wilderness area. Wilderness is an area:

- (a) where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain;
- (b) of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation;
- (c) which generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;
- (d) which is protected and managed so as to preserve its natural conditions;
- (e) which has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
- (f) which has at least five thousand acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and
- (g) which may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

These attributes serve as objectives to guide actions pertaining to the preservation and use of wilderness areas.

Twenty-two bighorn sheep guzzlers, given their design and distribution as proposed, would not substantially affect the overall natural character of any particular wilderness area. Mitigations developed through project-specific environmental assessments would ensure that water developments are constructed in a manner that minimizes their visibility. Except when in very close proximity to individual guzzlers, each wilderness area would continue to appear as though it has been affected primarily by the forces of nature. These water developments would be substantially unnoticeable in the wilderness landscape.

During periods of construction, opportunities for solitude or a primitive and unconfined type of recreation would be adversely affected, but such impacts would be localized and would occur only during the construction period. Mitigations developed through project-specific environmental assessments would ensure that construction occurs during periods when

disturbances to visitors are anticipated to be minimal. The use of motorized vehicles in support of California Department of Fish and Game management activities, including the maintenance of new water developments, is governed by “Memorandum of Understanding between Bureau of Land Management and California Department of Fish and Game for Wildlife Management Activities in Wilderness” (1997).

Consistency with wilderness management objectives:

In accordance with BLM Manual 8560, “*Management of Designated Wilderness Areas*,” a wilderness management plan is developed for each BLM-administered wilderness area as a means of applying wilderness management policy to that specific area. The plan would be tailored to local conditions by prescribing specific objectives appropriate to the area. (Section 8560.21)

As management plans have not been developed for the subject wilderness areas, the general objectives described above under “*Preservation of wilderness character*” provide guidance for management actions. Relative to these objectives, the effects of developing new guzzlers for bighorn sheep in wilderness areas have been assessed.

Facilities necessary to accomplish the task:

In accordance with BLM Handbook H-8560-1, wildlife management activities will emphasize the protection of natural processes. Management activities will be guided by the principle of doing only the minimum necessary to manage the area as wilderness. Further, in managing wilderness use, *wilderness-dependent* use is to be favored.

Whereas 24 new water developments are proposed in wilderness areas under this alternative, 64 such developments are proposed for locations outside wilderness. To the extent that the water developments proposed in wilderness areas are the minimum necessary to realize the stated goal, these bighorn sheep guzzlers constitute “wilderness-dependent” use.

From Issue 4: Wild Horses and Burros

Combining the Chemehuevi and Havasu HAs and HMAs into one HA and HMA would integrate a substantially larger portion of the Whipple Mountains Wilderness into an area managed for retention of burros than under current management. Combining the historical burro range, Chocolate/Mule Mountains HA, and Cibola/Trigo HA into one HA and HMA for burros would integrate substantially larger portions of the Indian Pass, Picacho Peak, and Little Picacho Peak Wildernesses into an area managed for retention of burros than under current management. Most of the Palo Verde Mountains Wilderness occurs within the existing and proposed HMA. As wild horses and burros are considered an integral part of the natural system of the public lands in areas where found, impacts to the natural conditions of these wilderness areas are acceptable if herd numbers are managed in accordance with the established AML and approved management plans.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

The effects of establishing “washes closed zones” and applying “biological parameters” relative to accessing wilderness areas by motorized-vehicles are discussed under *Issues 2 and 3* (this section).

Parker 400 competitive recreation route:

Under this alternative, the *Parker 400* competitive recreation route would be deleted.

This action would result in no adverse impacts to wilderness resources, and could benefit such resources to the degree that potential straying from the approved course into designated wilderness would be averted.

Johnson Valley to Parker competitive recreation route:

The potential for adverse impacts to resource values in the Sheephole Valley Wilderness would be the same as those described for the No Action Alternative (see *Issue 5*, section 4.1.6).

Competitive off-highway vehicle events in accordance with MUC guidelines:

Permitting competitive off-highway vehicle events in accordance with MUC guidelines would result in the same effects as described for the No Action Alternative (see *Issue 5*, section 4.1.6).

From Issue 6: Land Ownership Pattern

The effects on wilderness resources of acquiring in-holdings would be the same as described for the No Action Alternative (see *Issue 6*, section 4.1.6).

CUMULATIVE IMPACTS

The incremental addition of permanent facilities in wilderness areas generally diminishes the overall quality of wilderness resource values as would substantial increases in visitation. However, the construction of 24 wildlife water developments distributed among several wilderness areas would not significantly add to the existing imprints of man's past activities such that the apparent naturalness of any one wilderness area would be affected. To the extent that the new water developments would ensure viability of bighorn sheep populations in wilderness, the wildlife values of wilderness would concomitantly be increased. Further, it cannot be reasonably expected that visitation to wilderness areas in the NECO Planning Area will substantially increase in the near future.

4.2.7 Livestock Grazing Management

From Issue 1: Standards and Guidelines

The effects of adopting regional standards for Public Land Health, and guidelines for grazing management are similar to the No Action Alternative.

From Issue 2: Recovery of the Desert Tortoise

Reducing the size of Lazy Daisy allotment by 7 percent will not result in lowering perennial AUMs because the area falls within ephemeral rangelands. However, under this alternative cattle utilization of perennial plants within desert tortoise habitats would be decreased from 40 percent to 25 percent. This is a substantial drop in grazing use and would result in a reduction of available perennial forage. Current terms and conditions would become a condition of the lease. A grazing strategy could directly affect year-long grazing operations an estimated four out of ten years. Grazing use would be substantially reduced during these dry years at lower elevations and in dense desert tortoise habitat. Implementation of this strategy could take two to three years with extensive coordination with the lessee.

The Chemehuevi Allotment would be canceled and potential cattle production would cease. The lessee would not be afforded the opportunity to relinquish grazing use.

According to this alternative, the lessee for Lazy Daisy Allotment may voluntarily relinquish grazing use and related authorizations. Their request would initiate a grazing decision from the manager to cancel the area of the allotment, all forage allocations, and all range improvement projects on BLM lands. The intent of this portion of the alternative is to devote habitat solely to the recovery of the desert tortoise.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

With the cancellation of the Ford Dry Lake Allotment potential sheep production would cease. Reduction of the Rice Valley Allotment would impact livestock use along the west and southwest edge of the allotment. This reduction may not be a serious impact to grazing management since sheep are herded and herds would be directed away from the area of exclusion.

CUMULATIVE IMPACTS

Perennial forage is reduced in the Lazy Daisy Allotment and the Chemehuevi Allotment is eliminated which represents a reduction of income and a potential loss of current lifestyle to the lessees. Cattle production would be foregone on these Public Lands and opportunities for future grazing use do not exist elsewhere in the Planning Area.

After cancellation of grazing use and related authorizations, most existing range improvements for both allotments, but primarily Lazy Daisy Allotment would soon fall into disrepair and have to be abandoned unless the BLM or a cooperator assumes the maintenance responsibilities. Abandoned projects could become a safety hazard and will need removed. This process is expected to be costly for the BLM.

With potential reductions of grazing in the NEMO Planning Area, the Mojave National Preserve and the NECO Planning Area, there would be a noticeably reduction in the size of the portion of the livestock industry centered on grazing use of BLM administered lands in the California Desert Conservation Area. Reduction of cattle operations at this level in these planning areas could change the character of livestock operation.

4.2.8 Wild Horses and Burro Management

From Issue 1: Standards and Guidelines

In the short term, management actions to protect or improve ecosystem health may impact wild burro management by requiring a reduction in wild horse or burro numbers. This would allow for recovery of vegetation and stabilization of soil, especially in riparian areas. Over the long term, these actions would reduce indirect impacts on wild horses and burros by improving the overall forage condition and water quality and quantity within Herd Management Areas. This would lead to healthier animals and habitat in the long term

From Issue 2: Recovery of the Desert Tortoise

Some of the reduction in size of the Chemehuevi and Chocolate/Mule Mountains HMAs (see Issue 4 below) is due to the designation of DWMAs and the management prescription to not have HMAs inside DWMAs. However, the areas where the HMA boundary has been reduced from DWMAs are not frequently used by burros and the impact of this action alone is not significant.

Elimination of the Chemehuevi grazing allotment would reduce the intermittent competition that occurs between cattle and burro grazing in that area, although the amount of competition is not

significant.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

The size of the Chemehuevi HMA is 30% of original (i.e., in the No Action Alternative) and the new current management level is 72% of original. The size of the Chocolate/Mule Mountain HMA is 53% of original and the new current management level is 57% of original. The complexity of mixed agencies and mandates is discussed here. Removal of HMA designation from national wildlife refuges (NWRs) managed by USFWS and from Picacho State Recreation Area (SRA) and from other areas with species/habitat values (including tortoise) greatly enhances these entities to meet their management mandates and reduce impacts to valuable habitats and facilities. To some extent the scope of this enhancement also includes special status species in and along the Colorado River (and otherwise outside the NECO Planning Area). Based on abundance of forage and water, acre for acre, habitat on these excluded jurisdictions support the greatest amount of burros.

Allocation of natural waters on a fair share basis goes hand in hand with reductions above and should alleviate some of the burro/wildlife conflicts surrounding natural watering areas and relieve stress within burro herds of too many burros in a given area. Future fencing of some natural waters to exclude burros also furthers the goal and allocations described above. The distribution and fencing of allocated waters can help to achieve goals related to distribution of animals and forage use.

The reconfiguration of HMAs and allocation/fencing of waters inside will likely lead to episodes of water stress inside HMAs and an increase in nuisance burros off HMAs, especially in the NWRs and Picacho SRA during the hottest months of the year, no matter what the waters/forage situation is inside the HMA. However, a strategy and methods of burro removal (e.g., permanent water/feed traps on NWRs and the SRA), as well as fencing of some waters outside HMAs can significantly help mitigate this situation and.

Adding new (artificial) waters for bighorn sheep and rehabilitation of natural waters (which might result in more abundance of water) could help relieve water stress for all large animals at certain times.

Bighorn sheep ranges overlap most of the area of HMAs. Augmenting and reestablishing bighorn sheep demes will expand the attention given to coexistence of the two animals and could further future burro reductions.

From Issue 4: Wild Horses and Burros

HMA and animal numbers reductions are noted above. Elimination of the Picacho horse HMA would have no significance since any horses that may have once been in the area naturally left many years ago.

The reconfigured burro HMAs would create greater herd maintenance situation as burros will tend to move back into the former portions of HMAs, especially to NWRs and SRA during the hottest times of the year. Those area will continue to be impacted with some burro use. More frequent removals may be required to manage this situation, but could be handled cost-effectively, to some degree, with low-cost permanent traps. There is also the possibility that continuous herd drift and removal at traps could effectively and permanently draw herds down to well below AML not

withstanding other measures described to manage the ecosystem as a whole. To some degree, and in spite of the absoluteness of mandates and goals, the NWRs and SRA may have to accept a certain amount of light, intermittent use.

Seasonal variations in temperature, precipitation and forage production will affect distances traveled by burros. In the periodic drift that will occur off HMAs during generally wet/lush times to remote upland areas no removal action is generally taken to remove these burros unless they do not retreat in a timely manner and tend to become established in the herd area.

Removal of nuisance burros in the Piute Mountain HA will help achieve the original CDCA Plan decision to not manage for burros in that area.

Developing a unitized Wild Horses and Burros program between California and Arizona BLM offices, and to some degree with other agencies and entities (e.g., NWRs, SRA, CDFG, and conservation groups) for general program administration and specific actions such as monitoring and removals, will help achieve efficiencies and plan decisions. This analysis does not go into the details of such unitized program administration and actions.

CUMULATIVE IMPACTS

Burro management areas and numbers are reduced due to a variety of factors: Public land Health Standards, other species and habitats management issues, and assertions of other agencies with exclusionary mandates. Overall, burro AMLs would lower to about two-thirds their present levels and further reduces an already reduced scope of burros management in the region. In spite of proposed new management facilities, however, there is some question about the cost and feasibility of achieving and maintaining the proposed management situation given the vagaries of nature and intent to not manage for burros on lands which are the most desirable to burros in the hot months of the year. A unitized approach to managing the program among all the stakeholders, especially BLM offices in California and Arizona, will greatly improve the chance of success.

4.2.9 Recreation Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with Regional Standards and managing grazing activities in accordance with the specified regional guidelines would result in the same effects as discussed for the No Action Alternative relative to National Fallback Standards except benefits and effects would apply across the Planning Area.

From Issue 2: Recovery of the Desert Tortoise

The network of routes available for casual use as proposed under this alternative—which, in part, is based on actions to recover the desert tortoise including the establishment of “washes closed zones” in DWMAs would provide *reasonable* access for both motorized and non-motorized recreational activities. Except for wilderness areas wherein casual motorized-vehicle use is prohibited, recreationists would be able to drive their vehicles within reasonable proximity to most public lands within the NECO Planning Area. Opportunities for recreation, therefore, would not be appreciably affected consequent to route designations.

Contentions that the establishment of “washes closed zones” significantly affect hunting opportunities cannot be supported. Certainly, access to historic hunting areas would be reduced

upon closure of routes traditionally used for access, but can it be stated that opportunities for hunting would be concomitantly reduced? At issue is whether hunting can be pursued absent “open” motorized access to *all* reaches of the hunting area(s). If the approved route network provides reasonable access to substantial portions of the areas open to hunting, then such route designations would not be deemed as significantly affecting opportunities for hunting. The designation of additional routes or wash zones as “open” would not effectively increase opportunities for hunting, rather it would simply make the opportunities for hunting easier to realize. In fact, motorized access to all parts of areas open to hunting could detract from the experiences of those hunters desiring to walk moderate distances as part of their hunting activity. If vehicles impinge on these individuals’ solitude and, perhaps, frighten game, their experiences may be diminished in quality.

The same argument can be made relative to other non-motorized recreational pursuits that rely on motorized vehicles for access. The use of vehicles is often necessary to transport hikers or equestrians to trailheads, but once engaged in their non-motorized recreational pursuits, the close proximity of off-highway vehicles generally diminishes the quality of back country experiences. Given the extent of areas closed to motorized vehicles (e.g., wilderness areas) along with the proposed network of available routes under this alternative, which includes “existing” routes and those designated “open” and “limited,” opportunities for high-quality motorized *and* non-motorized recreational experiences would be maintained.

Under current management, stopping, parking, and vehicle camping is allowed within 300 feet of routes, except within sensitive areas such as ACECs where the 1980 CDCA Plan limit of 100 feet applies. Limiting such activities in DWMA’s consistent with the limitations for sensitive areas under the No Action Alternative—except the 100-foot limitation would be measured from a route’s centerline instead of its edge—would result in the same effects as discussed for the No Action Alternative (see *Issue 2*, section 4.1.9). The lands no longer available for stopping, parking, and vehicle camping through modification of the “100-foot rule” as indicated would be insubstantial.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Closure of a route under this alternative is strongly considered depending on a route’s proximity to certain species and/or their nesting/hibernation locations, proximity to natural or artificial water sources, and whether the route is redundant. Application of these criteria to conserve special status species and natural communities would result in minor impacts to vehicular access and, therefore, to recreation. Localized restrictions to vehicular access would occur, but the network of routes available for casual motorized use would continue to provide reasonable access. Few areas outside wilderness would be inaccessible by vehicles, that is, access to virtually all parts of the Planning Area would be afforded within reasonable proximity.

However, this does not mean that changes to the manner in which certain activities are pursued would not be required. For instance, vehicular access for hunting in the Chuckwalla Bench is currently allowed in all navigable washes. Under this alternative such “unlimited” access would no longer be permitted. Instead, motorized-vehicle access in the Chuckwalla DWMA would be limited to approved routes of travel, including specific washes and navigable washes in “washes open zones” only. Although the motorized component of the hunting experience would be somewhat limited, the hunting experience itself would be little constrained. Hunters able to walk short to moderate distances could still pursue this activity throughout virtually the same area as

previously hunted. Those less able to walk would be further constrained concomitant with the limitation of access, but ample opportunity would still exist for this recreational endeavor. Under this alternative, the area designations of Ford Dry Lake and Rice Valley Dunes would be changed to preclude vehicular “free-play.” In other words, these areas would no longer be designated Off-Highway Vehicle Recreation Areas. It may have been anticipated upon their designation through the CDCA Plan that use would occur at levels above which anecdotal evidence suggests currently occur. Relatively low use of these areas for off-highway vehicle free-play is perhaps a function of remoteness from populated areas, or in the case of Ford Dry Lake, the lack of its physical attractiveness and available opportunities for a challenging experience. Therefore, limiting vehicular use in these areas to approved routes would affect relatively few OHV enthusiasts. Free-play in these areas is a less important recreational endeavor than vehicular touring on a network of routes.

From Issue 4: Wild Horses and Burros

Actions proposed under this alternative are not anticipated to affect opportunities for recreation.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Managing motorized-vehicle access in accordance with MUC guidelines established in the CDCA Plan, as amended, would affect opportunities for recreation in the same manner as described under *Issues 2 and 3* (this section).

Elimination of the *Parker 400* corridor would result in no adverse impacts to recreational opportunities. It has been a decade since the *Parker 400* event last occurred in California; interest in reestablishing the event on the California loop is no longer being expressed. The *Parker 400* event now occurs entirely in Arizona but has not been run over the last few years.

Conditions imposed on competitive vehicle events in the *Johnson Valley to Parker* corridor as proposed under this alternative would not substantially constrain such events. For events outside the *Johnson Valley to Parker* corridor, applications would no longer be considered on other alignments through MUC guidelines.

Modification of the “300-foot rule” for stopping, parking, and vehicle camping outside DWMAs such that the 300-foot distance is measured from a route’s centerline instead of its edge would not substantially affect opportunities for these activities and would reduce confusion about the point of application of the rule.

From Issue 6: Land Ownership Pattern

Actions proposed under this alternative are not anticipated to affect opportunities for recreation (see discussion for the No Action Alternative: *Issue 6*, section 4.1.9).

CUMULATIVE IMPACTS

Increased restrictions on motorized-vehicle access—the closure of additional routes and the establishment of “washes closed zones” in DWMAs—cumulatively affect opportunities for motorized recreation in an adverse manner. The number of routes on which one may drive for pleasure, or enjoy “touring” activities, would decrease under this alternative. There is a concomitant decrease in opportunities for vehicle camping in conjunction with increasing limitations on access. Such restrictions are consistent with an apparent trend over the last several decades to limit motorized recreation in ways that would minimize the potential for damage to

natural and cultural resource values.

Conversely, opportunities to escape the sights and sounds of the mechanized world would be increased under this alternative. The limitations on motorized-vehicle travel are not such that access to sites for non-motorized activities would be substantially affected. The availability of additional opportunities for these activities is consistent with an apparent trend in recent years to favor non-motorized recreation recognizing that such activities generally have less potential for damaging resource values than motorized activities. However, it is not anticipated that opportunities for non-motorized recreation will not continue to increase in the reasonably foreseeable future.

4.2.10 Motor Vehicle Access

From Issue 1: Standards and Guidelines

The effects on motorized-vehicle access consequent to managing ecosystem health in accordance with Regional Standards are the same as described for No Action Alternative relative to National Fallback Standards and except benefits and effects would apply across the Planning Area.

Under this alternative, management actions to maintain healthy, productive, and diverse populations of native species are proposed in association with *Issues 2* and *3*. Impacts to motorized-vehicle access consequent to adoption of those actions are discussed under these issues (this section).

From Issue 2: Recovery of the Desert Tortoise

Actions proposed under this alternative to recover the desert tortoise—including the establishment of “washes closed zones”—would affect casual motorized-vehicle access as described under *Issue 2*, section 4.2.9 (Recreation Management). Access for *other* than casual purposes (access related to activities which require specific authorizations) would be addressed through the applicable permitting process and involves specific route(s) for specific proposal(s). The authorized use of a “closed” route usually limits this use in some manner (e.g., number of trips, season of use, speed limits, accompaniment by a wildlife biologist, etc.) and/or requires mitigation in some form (e.g., restoration of impacts, payment of mitigation fees, etc.). Route designations, which are applicable principally to casual use, would have little to no effect on access for non-casual purposes.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Actions proposed under this alternative to conserve special status species and natural communities—application of special “biological parameters” relative to designating routes of travel as “closed”—would affect casual motorized-vehicle access as described under *Issue 3*, section 4.2.9 (Recreation Management). The effects of route closures on non-casual activities would be the same as described under *Issue 2* (this section).

From Issue 4: Wild Horses and Burros

Actions proposed under this alternative are not anticipated to affect motorized-vehicle access.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Managing motorized-vehicle access in accordance with MUC guidelines established in the CDCA Plan, as amended, would limit access to the same degree as described under *Issues 2* and *3* (this section). In accordance with the criteria at 43 CFR 8342.1, routes would be available for use

where harassment of wildlife or significant disruption of wildlife habitats are minimized with special attention afforded to listed or sensitive species. Where such impacts to wildlife and their habitats are not anticipated, routes in MUC “L,” including navigable washes, would be designated “open”; “existing” routes in MUC “M” areas and MUC “T” areas not designated “open” to motorized-vehicle access would also be available for use. Limitations on motorized-vehicle access for both casual and authorized use consequent to route designations under this alternative would not substantially affect such access.

Manageability:

As to whether the limitations on access under this alternative would be perceived as fair and reasonable by the general public is undetermined. Compliance with the rules, to some degree, is related to these perceptions, as well as beliefs as to the effectiveness of access limitations in achieving the stated goals of the NECO Plan. If the public views the access limitations as unfair and unreasonable, and believes such limitations will not substantially benefit species and their habitats, compliance could be problematic. Contributing to the public’s possible unwillingness to accept less than well-substantiated rationale for access limitations is the NECO Plan’s occurrence on the tails of the California Desert Protection Act of 1994 which prohibited casual motorized-vehicle access on at least 669 miles of routes now in designated wilderness areas.

Although motorized-vehicle access would be more constrained under this alternative than the No Action Alternative due to the establishment of “washes closed zones” in DWMAs and application of “biological parameters” throughout the NECO Planning Area, it is anticipated that successful management of vehicular activities would be achieved. (The discussion under “*Manageability*,” *Issue 5*, section 4.1.10, is relevant to this alternative.)

From Issue 6: Land Ownership Pattern

Under this alternative, impacts to motorized-vehicle access would be the same as discussed for the No Action Alternative (see *Issue 6*, section 4.1.10).

CUMULATIVE IMPACTS

Motorized-vehicle access and opportunities for recreation are closely linked in the California desert. The cumulative effects on motorized-vehicle access under this alternative, therefore, are the same as described in the section entitled “Recreation Management” for the Preferred/Large DWMA Alternative.

4.2.11 Mineral Management

The following affects are additional or change to affects described in the No Action Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

From Issue 1: Standards and Guidelines

Minerals operations could be subject to some additional mitigation and reclamation requirements that might result in slight to modest increases in the cost of operation and shutdown phases.

From Issue 2: Recovery of the Desert Tortoise

The compensation requirement would be simplified to one formula but would increase for small

operations that would have had been guided by less than 5:1 ratio and possibly reduce for the few very large operations that would have met a 6:1 ratio requirement. In areas where MUC M changes to MUC L casual use would be subject to more costly and time consuming plans of operations and NEPA review. Nearly all operations would benefit from the authorization streamlining of the 100 acres programmatic plan consultation with the U.S. Fish and Wildlife Service. Mineralized lands currently included in areas no longer covered by critical habitat, especially part of the Chocolate Mountains - Picacho gold belt, would not be subject to DWMA/Critical Habitat management prescriptions, but would still be subject to standard tortoise mitigation. Requiring a performance bond and performance standards for reclamation would increase the cost for all surface-disturbing operations regardless of size. From an analysis of the reasonably foreseeable future it is anticipated that no operations would be restricted due to the 1% surface disturbance limitation.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Minerals operations in WHMAs could be subject to a variety of small scale surveys, mitigation, compensation, and reclamation requirements that could result in a slight increase in the cost of operation and shutdown of operations. The nature and degree of requirements would vary with the nature of habitats and species and time of year. Access and valid existing rights would not change and mining restrictions would not be added. This includes mining opportunities in the Eagle Mountain area where MUC I would change to MUC L/M, and salt extraction mining on Bristol, Cadiz, and Danby playas which would be included in the system of WHMAs.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

There would be a slight additional loss of access from closing non-routes which could affect casual mining activity. Authorized use of closed routes would be considered for authorized mining activities which would affect such activities to the extent of time and costs of gaining necessary authorization.

From Issue 6: Land Ownership Pattern

Consolidations of land ownership could be a beneficial in that access and operations involving single, uncomplicated ownership patterns could simplify legal aspects of mining rights as long as surface and mineral estates were not split. Acquired lands in areas not already withdrawn from mineral entry would be open to mineral entry. Public lands which would be disposed to private ownership could be developed for mineral values depending upon the disposition of the new land owner.

CUMULATIVE IMPACTS

Proposed designations and management prescriptions for species and habitats would continue the trend of ecological impacts reducing measures, but these amount only to small additional costs requirements to conducting the search for and development of minerals which opportunity is otherwise not affected. While access to minerals has considerably diminished over several years due to a variety of designations, a more sophisticated approach to ecosystem management, which this plan proposes, should obviate the need for further species listings which are much more industry devastating. Since this plan is both strategic, programmatic, and multi-agency cooperative in nature, permit processing and NEPA document writing time should be greatly reduced.

4.2.12 Cultural Management

From Issue 1: Standards and Guidelines

Same as the No-Action Alternative except that under that Regional Standards for Public Land Health are applied and the described benefits would extend throughout the planning area.

From Issue 2: Recovery of the Desert Tortoise

The Preferred/Large DWMA will designate the Chemehuevi and Chuckwalla DWMA, encompassing approximately 1,703,159 acres, for the protection of desert tortoise and significant natural resources. All MUC Class "M" lands within the DWMA will be designated as MUC Class "L". Cumulative new surface disturbance on Federal and State administered lands will be limited to 1 percent of the Federal/State proportion of the DWMA. These actions should result in greater protection and preservation of cultural resources within the DWMA boundaries.

The establishment of DWMA is an administrative action that has no direct, immediate, or measurable on-the-ground effect on cultural resources. Management prescriptions authorized within DWMA, such as installation of tortoise fencing and crossings, acquisition and disposal of lands, wildfire suppression, and installation of wildlife guzzlers, may qualify as an undertaking and are subject to review under Section 106 of the NHPA. Activities, such as constructing right-of-way and tortoise fencing along major highways might affect cultural resources. These actions will be reviewed in accordance with Section 106 during the course of normal NEPA review for a proposed action. This reflects no change from current management policy for cultural resources.

Grazing Management

Current range management practices will continue. Effects are the same as described for the No-Action alternative.

Approximately 21,606 acres of the Lazy Daisy cattle allotment will be eliminated. This will have a positive benefit for cultural resources by reducing the threats from grazing to any recorded sites. Currently there are 45 recorded resources within the existing allotment boundaries (see Table 4-9). These sites will remain within the reduced allotment boundaries in this alternative.

The Chemehuevi Grazing Allotment will be eliminated. This will have a positive benefit to cultural resources by removing 137,321 acres from grazing threats to all cultural resources. Currently, there are 55 known sites recorded within the boundaries of the Chemehuevi Grazing Allotment.

Management policy will continue to be to analyze effects to cultural resources from grazing during the NEPA review of rangeland lease renewals and would continue in the No-Action alternative. New range improvements will continue to be reviewed under Section 106 at the time they are proposed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

In the Preferred alternative, MUC Class designations in the Eagle Mountains area will be changed from I to L in the proposed Bighorn Sheep WHMA. Fencing is programmatically proposed around hazards to bighorn sheep. The Ford Dry Lake domestic sheep allotment is eliminated. The Rice Valley domestic sheep allotment boundaries will be reduced by 9,264 acres. Both allotments currently encompass 135,247 acres of land. Seven sites are recorded within the Rice Valley allotment and 53 sites are recorded in the Ford Dry Lake allotment (Table 4-9). Elimination of

the Ford Dry Lake allotment will remove 49,682 acres from grazing and will eliminate the threat from grazing to the 53 known sites within the allotment. The seven known sites will still remain within the boundaries of the Rice Valley allotment. The elimination or reduction in size of these allotment will have a positive benefit to the protection and preservation of cultural resources that have yet to be recorded.

There are 137 new water development (guzzler) locations identified in this alternative. In Small DWMA B only 24 guzzlers are proposed with no locations specified. Of these locations, nineteen are located within .25 miles of a known cultural resource. Proposals for new water developments would continue to be reviewed on a case-by case basis as part of the environmental assessment. These actions will be reviewed in accordance with Section 106 during the course of normal NEPA review.

From Issue 4: Wild Horses and Burros

Analysis is the same as the No-Action alternative. Under the Preferred Alternative, Herd Areas are eliminated, existing Herd Management Areas are combined and reduced in size to 371,172 acres. Herd populations will managed at existing levels. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific actions that are carried out to meet the standards may satisfy the definition of an “undertaking”, such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

The Preferred alternative would remove 559,734 acres from management for Wild Horse and Burro herds. This would result in a positive benefit to cultural resources by reducing the number of known sites subject to impact from herd behavior by 417 sites. There are 399 recorded cultural resources identified within the boundaries of the HMAs for this alternative. (Table 4-10)

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations

General analysis is the same as the No-Action alternative (see Table 4-11), except that the size of the APE changes. In the Preferred Alternative, routes outside DWMA's allow casual use activities within 300' of a route (600' APE). Inside DWMA's, activities are limited to within 100' of a route (200' APE).

Under the Preferred Alternative, 444 cultural resources have been identified as located on BLM managed lands and falling within the 600' APE for routes that are under review for “open” designation outside DWMA's (Table 4-11). Sixty-eight sites are located within DWMA's. Of these, 153 sites have either been listed, determined eligible, or are considered likely to be eligible and 131 of these sites are considered to have qualities and values that might be adversely affected by activities authorized within the APE of a route. In this alternative, 119 route segments have been identified as having potential conflicts with cultural resources. These segments will not be designated either “open” or “closed” pending a physical assessment of the sites and evaluation of threat that proximity to an open route might pose. If it is determined that these routes may have or have had an adverse effect on historic properties, BLM will close these routes or will consult with SHPO on the appropriate course of action to resolve the effect.

Competitive Off-Highway Vehicle Events

Analysis remains the same as the No-Action alternative. Under the Preferred Alternative, the

Parker 400 competitive recreation route would be eliminated, reducing the linear miles of competitive recreation routes from 63 to 32 miles. At present, there are no recorded archaeological and historic sites located within 300 feet of the race corridor. The Johnson Valley to Parker Route would remain available for competitive recreation events. Event specific EAs are required for competitive off-road vehicle events. Race events will be reviewed on a case-by-case basis. Under this alternative, BLM would continue to review all projects for effects to cultural resources on a case-by-case basis as part of NEPA review at the time they are proposed.

From Issue 6: Land Ownership Pattern

Same as No-Action Alternative.

From Issue 7: Access to Resources for Economic and Social Needs

Same as No-Action Alternative.

From Issue 8: Incorporation of Wilderness Areas into CDCA Plan

Same as No-Action Alternative.

CUMULATIVE IMPACTS

In the Preferred alternative, there would be a net indirect benefit to the protection, preservation, and management of cultural resources from the adoption of Regional Standards and Guidelines for rangeland health. There will be a direct benefit to cultural resources by removing the Chemehuevi Range Allotment and portions of the Lazy Daisy from grazing. And reducing the size of Herd Management Areas. There will be further benefit in changing MUC classifications from M to L, as well as limiting cumulative surface disturbance within DWMA's to one percent. Reduction of the authorized use area along routes in DWMA's to 100', will directly benefit cultural resources by reducing threats from off-highway vehicle, camping, and parking along those routes. There will also be a direct benefit to cultural resources by reducing the length and scale of competitive race corridors.

4.2.13 Lands and Land Use Authorization

The following affects are additional or change to affects described in the No Action Alternative. No attempt is made to quantify the number people, companies or actions affected by the following.

From Issue 1: Standards and Guidelines

Lands actions could be subject to some additional mitigation and reclamation requirements that might result in slight increases in the cost of operation and shutdown phases.

From Issue 2: Recovery of the Desert Tortoise

Compensation requirement would be simplified to one formula, but would increase for small actions that would have had been guided by less than 5:1 ratio and possibly reduce for the few very large operations that would have met a 6:1 ratio requirement. In areas where MUC M changes to MUC L there would be little difference in management given that the areas of change are currently in critical habitat. Given that this alternative provides strategic management approach and programmatic consultation for the desert tortoise, nearly all lands actions would benefit from processing and authorization streamlining. There is a good chance that this alternative reduces or eliminates additional species listing which in turn would stabilize costs and processing issues.

Some lands currently in critical habitat would be excluded from DWMA, but would still be subject to standard tortoise mitigation. Requiring a performance bond and performance standards for reclamation would increase the cost for all lands actions on public lands. From an analysis of the reasonably foreseeable future it is anticipated that few if any proposed lands actions would be restricted due to the 1% surface disturbance limitation; however, in light of unknown demand and the long-term implication of this limitation, it is possible that some proposals for which decisions are discretionary could be denied or relocated to a location outside DWMA. The proposed limited closures would have little effect as demand for such lands applications is very low or does not exist.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Lands actions proposals in WHMAs could be subject to a variety of small scale surveys, mitigation, compensation, and reclamation requirements that could result in a slight increase in the cost of operation and shutdown of operations. The nature and degree of requirements would vary with the nature of habitats and species and time of year. Given that this alternative provides strategic multi-species management and is coordinated among several management and regulatory agencies, nearly all lands actions would benefit from processing and authorization streamlining. There is a good chance that this alternative reduces or eliminates additional species listing which in turn would stabilize costs and processing issues.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

There would be not additional impacts here from the No Action Alternative.

From Issue 6: Land Ownership Pattern

Consolidations of land ownership is greater than in the No Action Alternative and could be even more beneficial to land actions where there are single, uncomplicated ownership patterns.

CUMULATIVE IMPACTS

This alternative continues but stabilizes the trend of operational costs dues to species and habitats conservation needs. While costs may rise somewhat, authorization processing should accelerate.

4.2.14 Socio-economic

From Issue 1: Standards and Guidelines

Impacts would be similar to the No Action Alternative for grazing allotments. Implementation of regional standards may increase costs associated with continued use of the lease.

Impacts to the public and surrounding communities are indirect and are generally minor, both locally and regionally. In the long-term, public lands, which meet standards, are a benefit, both for local communities and for regional tourism.

From Issue 2: Recovery of the Desert Tortoise

Potential socio-economic impacts to the four grazing operations are as follows:

Cancellation of the Chemehuevi Allotment, loss of the northeast portion Lazy Daisy Allotment, and cancellation of ephemeral grazing use would directly impact livestock production on 158,927 acres. Cancellation of Chemehuevi Allotment would preclude potential production of livestock.

The reduction of acreage in the Lazy Daisy Allotment would not significantly affect grazing operations due to ephemeral production of this area. However, utilization has been reduced from 40 percent to 25 percent in the DWMA. This is a substantial drop in use inside the DWMA, an estimated 37 percent reduction of perennial forage is expected. This 22 percent reduction would leave 2,483 AUMs or 207 cattle all year long. This is a significant and adverse consequence to the lessee. A grazing strategy to mitigate cattle impacts to tortoise and their habitats could directly affect year-long grazing operations an estimated four out of every ten years. Grazing use would be substantially reduced during the dry years, similar to current grazing practices. Implementation of this strategy could take two to three years with extensive coordination with the lessee.

The potential voluntary relinquishment by the lessee of all grazing use in Lazy Daisy Allotment has no effect until activated. After the lessee requests relinquishment, cattle production would cease on 470,207 acres in the Planning Area.

Construction of range improvements according to this alternative would be costly, although impacts are not as great as other alternatives. The proposed range improvements on the Lazy Daisy Allotment include 18 miles of fence, three cattleguards, four water sites, six water facilities with four miles of pipe, and three corrals. The total cost for all of the improvements under this alternative would be \$196,010. It is anticipated that critical improvements would be completed during short-term, and depending upon the timing and funding sources, development for most improvements could take more than ten years. All existing cattleguards would be modified to prevent entrapment of desert tortoises. New cattleguards will be designed to prevent entrapment of desert tortoises.

Requiring compensation at a 5:1 ratio inside DWMA boundaries could cause an impact to certain permitted uses such as mining, communication site construction and utility construction by increasing the amount of compensation required.

No significant socio-economic impacts are anticipated for current mining operations. There are no proposed changes expected in employment and income in the mining sectors economy. Any changes to mining operations that will have socio-economic impact are not known. Other issues that may increase operating costs or cause changes to life style patterns are also unknown at this time.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Potential socio-economic impacts to the sheep grazing and mining operations are as follows:

Deleting Ford Dry Lake Allotment would have a negative impact on the grazing operator by eliminating the economic benefit from potential sheep production. The economic impact would be minimal because the allotment is rarely grazed. The Ford Dry Lake Allotment has been grazed twice since 1979. Deleting portions of the Rice Valley Allotment would minimally affect potential sheep production. Administration of the area excluded may affect the lessee with incurred costs to stay east of the line.

Expenses incurred by mining operators due to protecting the bat populations that my roost in adits and shafts has yet to be determined. Other issues that may increase operating costs or cause changes to life style patterns are also unknown at this time.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Potential socio-economic impacts to recreation operations are as follows:

Restricting stopping, parking and camping to 100 feet will have little impact on the public's access to the Planning Area. No estimation of recreation visitor day numbers are available, therefore the potential socio-economic impacts associated with vehicle camping in these areas is unknown at this time.

Closure of Ford Dry Lake and Rice Valley open areas would have a minor effect on recreation as very little use has ever been made of these two areas. Closing the parker 400 and retaining the Johnson Valley - parker competitive race routes are commensurate with diminishing interest in point to point race events.

Designating routes as "open", "closed" or "limited" will not significantly affect traffic patterns. Less than 5% of inventoried routes are proposed for closure and wash-closed zones will have little to no significant socio-economic affect on the human component.

Closure of Ford Dry Lake and Rice Valley Open Areas would have a minor social effect, as very little use has been made of these two areas.

From Issue 6: Land Ownership Pattern

Potential socio-economic impacts to recreation operations are as follows:

In looking at this alternative, there are two categories of land ownership that will potentially have socio-economic impacts. These land adjustments categories relate to public lands that will be in protected zones and private lands that the Federal government would like to exchange or purchase. The least complicated adjustments that would be made between the Agency and the owners are the single owner per section proprietorship, and the 2-5 owners per section proprietorship. Table 4-19 shows changes in the acres of land identified by public and private classifications. These totals reflect the "realistic" change within the management areas. Social well-being concerns that may impact private owners' decision-making related to the proposed adjustments and their willingness to participate in increasing public land ownership are unknown at this time.

Working with the fewest number of owners will significantly reduce the cost to the Agency and create less disruption to the owners in the more densely owned parcels. The land available for adjustment in the eastern section of the Planning Area, closest to the cities of Needles and Blythe, may have the most appeal to some of the private land owners since there are areas of higher population and have the greatest potential for generating revenue from tourism activities. Other public lands outside of the Planning Area may need to be considered for exchange in order to accomplish public land consolidation objectives. These exchanges outside the Planning Area may increase social and economic well-being, and thus, have appeal to other private land owners. Accomplishing acquisition through exchanges is the preferred method, however it is impossible to predict what methods may prevail.

Table 4-19. Proposed Changes to Public and Private Acres in Conservation Zone

County	Preferred/Large DWMA and Small DWMA A Alternatives	
	Private*	Federal**
San Bernardino	75,009	1,676,556
Riverside	112,865	1,580,280
Imperial	71,833	532,271

*Combined totals of acres of privately owned lands in 1 and 2-5 density classes. These would be included in Federal acquisition programs through purchase or exchange.

**Total Federal Lands in Proposed Conservation Zones.

CUMULATIVE IMPACTS

Overall there would be only minor socio-economic impacts in this alternative because 1) uses and use levels in the planning area are low, and 2) on both an area and restrictive basis proposed changes that affect uses are relatively small. Grazing leases proposed for elimination are seldom used, the OHV open areas are seldom used, and most of the roads to be closed show evidence of disuse or are redundant in nature. Just how difficult it will be to design and implement a grazing strategy for the Lazy Daisy allotment remains to be seen. The increased cost of land use permits and proactive agency conservation efforts would be off-set by reduced processing time - i.e., streamlining - and a more simplified pattern of land ownership. The opportunity to relinquish a grazing lease and simplify the land ownership pattern involves willing sellers and fair market compensation. Except for the limitation on surface disturbance in DWMAs the conservation emphasis in this plan is not on restrictions but proposes cost of doing business (mitigation, compensation, rehabilitation of disturbance, proactive habitat work) commensurate with species and habitat values. One public cost, highway fencing for tortoise in DWMAs, is very high, as well as potential tax base loss for counties. If all the measures work over time, then little to no additional restrictions would be required in the future from species and habitat listings/issues.

4.3 Small DWMA A Alternative

4.3.1 Air Quality

From Issue 1: Standards and Guidelines

This alternative is similar to the Preferred Alternative.

From Issue 2: Recovery of the Desert Tortoise

The designation of approximately 1,384,310 acres of Federal land as ACECs would have a slight positive effect on air quality through implementation of specific management prescriptions designed to reduce surface disturbance. The Chemehuevi DWMA (ACEC) reduces the amount of grazing by 277,678 acres and designates routes as open, closed or limited. The reduction in surface disturbance is 46% more than the Preferred/Large DWMA Alternative and there would be a positive benefit to air quality from reduction of PM₁₀ emissions in the Lazy Daisy allotment.

Wildfire suppression efforts would result in reduced particulate (PM₁₀) production and visibility impairment from smoke and wild-blown dust. Short term impacts from suppression potential

increase levels of particulate pollution from surface disturbance of fire fighting equipment and operations. However, successful suppression efforts minimize the number of acres impacted as a result of vegetative cover loss.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Air quality would be enhanced by limiting future off-road vehicle activity to existing roads and trails. Competitive off-road vehicle activities are deleted from the Planning Area which will eliminate the airborne particulate matter (PM₁₀) produced from events. Dust generated from the off-road vehicle activities at the newly designated Chemehuevi Open Area is not expected to significantly impact the area because it is located at the downwind planning boundary.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.3.2 Water Quality

From Issue 1: Standards and Guidelines

This alternative is the same as the Preferred Alternative.

From Issue 2: Recovery of the Desert Tortoise

The designation of approximately 1,384,310 acres of Federal land as ACECs would have a slight positive effect on water quality through implementation of specific management prescriptions designed to reduce improve water quality and surface disturbance. The elimination of livestock grazing in DWMA's would improve vegetative condition and consequently result in better protective ground cover and soil-holding capability. Erosion and soil loss would be reduced and water quality improved as a result of better dissipation of energy this is associated with storm water runoff.

Reduced grazing on 277,678 acres would result in potential improvement in water quality at spring sources through removal of coliform bacteria contamination. The reduction in grazing is 60% more than the Preferred/Large DWMA Alternative.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Same as the Preferred/Large DWMA Alternative.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.3.3 Soil Quality

From Issue 1: Standards and Guidelines

This alternative is the same as the Preferred Alternative.

From Issue 2: Recovery of the Desert Tortoise

Impacts to soil quality through implementation of the Small DWMA A Alternative are similar to the Preferred/Large DWMA Alternative with the following exception:

DWMA size is 18% smaller than the Preferred/Large DWMA Alternative which will reduce the

amount of area managed for improvement of species and habitat. It is unlikely, however that the reduced area will result in a measurable increase in soil erosion or decrease soil quality. Reducing grazing by 58% will positively impact soil quality through preservation of vegetative cover and resultant decrease in erosion and soil loss. Additionally, soil compaction which channels and concentrates storm water runoff would be reduced. Although the actual acreage of disturbance is unknown, since cattle don't graze every part of the allotment, it is expected that the potential improvement to soil quality would be significant in highly disturbed areas. Installation of additional improvements would slightly increase soil disturbing impacts.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.3.4 Vegetation Management

From Issue 1: Standards and Guidelines

This alternative is the same as the Preferred Alternative.

From Issue 2: Recovery of the Desert Tortoise

The effects on natural communities, ecosystem processes, and special status plants in this Alternative are similar in nature to the impacts described for the No Action Alternative, but are reduced somewhat based mostly on the establishment of DWMA's where some uses are restricted. Specific differences in impacts between the No Action Alternative and the Tortoise Recovery are described below.

Natural Communities

Table 4-20 shows the acres and percent of total of each natural community within the 1,384,310 acre DWMA. Although the level of conservation management is less, the DWMA's can be viewed as augmenting the portions of each natural community that are in JTNP, CMAGR, and BLM wilderness (Table 4-1).

Table 4-20. Acres and percent of total of each natural community within small DWMA's.

Natural Community	DWMA's
Sonoran Desert Scrub	1,053,756 (28)
Mojave Desert Scrub	135,751 (17)
Desert Dry Wash Woodland	192,352 (28)
Mojave Pinyon/Juniper Woodland	
Desert Chenopod Scrub	
Playas	1,142 (1)
Springs and Seeps (no. of sites)	33 (24)
Sand Dunes	

The fencing of extensive portions of major highways, roads, and railroads would protect the animal component of the bisected natural communities. This is addressed more fully as it affects ecosystem processes.

Changes in fire management policies, though not great, will provide some additional protection of natural communities. This will also aid in the defense against the spread of alien weeds.

Comparing the No Action Alternative and the Small DWMA A Alternative (Table 4-21) cattle grazing is reduced significantly in Sonoran Desert Scrub (from 247,420 ac. to 61,490 ac.) and somewhat in Mojave Desert Scrub (from 207,450 ac. to 163,197 ac.) based on reductions in the two cattle allotments to benefit desert tortoise. The impacts of grazing on natural communities as described in the No Action Alternative would be reduced accordingly.

Table 4-21. Acres and percent of total of each natural community within BLM grazing allotments

Natural Community	Lazy Daisy Cattle	Chemehuevi Cattle
Sonoran Desert Scrub	25,871 (1)	35,619 (1)
Mojave Desert Scrub	163,197 (20)	
Desert Dry Wash Woodland	1,493 (<1)	
Mojave Pinyon/Juniper Woodland	1,928 (100)	
Desert Chenopod Scrub		
Playas		
Springs and Seeps (no. of sites)	15 (11)	
Sand Dunes		
All NECO lands	192,529 (4)	36,077 (<1)

The net effects of the restriction on camping to designated sites is difficult to assess. Whereas light impacts scattered along existing routes would be reduced, vehicle associated impacts at the designated campsites would increase in size.

Natural communities would benefit from improved coordination among agencies and monitoring of the health of these communities. Monitoring is to be developed through the Desert Managers Group and coordinated by a desert-wide coordinator. The amount and nature of this monitoring is to be determined in the future. Monitoring in these community types outside of the NECO Planning Area may be equally beneficial.

Special Status Plants

Most impacts on special status plants can be expected to occur on BLM non-wilderness lands and private lands. As in the No Action Alternative, avoidance of special status plants in project construction will be the most effective measure. However, some special status plants are not observable in some seasons or in some years. Restrictions on uses within the DWMA's will reduce impacts to the habitat of these species even where not observable or in suitable habitat where not currently growing.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

The impacts described for the Preferred/Large DWMA Alternative generally apply except that the amount of DWMA is lower and the amount of WHMA is higher. (In Table N-12 Appendix N the total Conservation Zone figures are the same.)

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Benefits and impacts related to LTVAs is the same as for the No Action Alternative.

All existing competitive routes and opportunities to design new ones is eliminated in this alternative thus eliminating all real and potential impacts from such activity as described in previous alternatives.

Impacts from the pattern of road designations would be about the same as for the Preferred Action except with fewer “open” roads in DWMAs. Impacts to plant communities and special status plant species would be reduced.

CUMULATIVE IMPACTS

General Vegetation

Effects on general vegetation will be similar to the Preferred/Large DWMA Alternative except for the following items.

The reduced DWMA size will result in less benefit from that designation and the associated conservation measures.

Elimination of burros from HMAs will eliminate impacts of grazing and trampling by these animals, especially near watering sites.

Special Status Plants

Effects on special status plants will be similar to the Preferred/Large DWMA Alternative except as described for general vegetation.

Biological Crusts

Effects on biological crusts will be similar to the Preferred/Large DWMA Alternative except as described for general vegetation.

Riparian/Wetland

Effects on riparian and wetland areas will be similar to the Preferred/Large DWMA Alternative except as described for general vegetation.

Elimination of burros from HMAs will eliminate impacts of grazing and trampling of riparian and wetland vegetation around springs and seeps.

Noxious Weeds

Effects from noxious weeds will be similar to the Preferred/Large DWMA Alternative except as described for general vegetation.

4.3.5 Wildlife Management

From Issue 1: Standards and Guidelines

Same as the Preferred Alternative.

From Issue 2: Recovery of the Desert Tortoise

Desert Tortoise

The effects resulting from the Small DWMA A Alternative on desert tortoise are similar in nature to the impacts described for the Preferred Alternative. Some impacts are greater in this alternative because the DWMA's are smaller.

The DWMA's are near the minimum size (1,000 sq. mi. = 640,000 ac.) specified in the Recovery Plan. Surface disturbance in the DWMA's will be reduced by 1) changing all BLM lands from MUC M to MUC L, 2) fencing the DWMA boundaries where conflicts are later identified, and 3) designating routes of travel as open, closed, or limited. Restricting stopping and parking to 30 feet from the centerline of the road would reduce off-road impacts slightly and restricting camping to designated areas will result in a reduction of disturbance along routes, but disturbance around designated campsites will likely radiate out at increased levels.

The elimination of non-hunting shooting may reduce tortoise gunshot deaths; however, such mortality is low in these areas (Berry 19XX). The requirement that all dogs be on leashes in the DWMA's will have unknown benefits because the amount of harassment of tortoises by dogs is not known.

The elimination of cattle grazing from the DWMA's will reduce the potential for competition for annual plants, trampling of tortoises and burrows, and alteration of plant composition. Eliminating the Chemehuevi Allotment will greatly reduce the acreage grazed and the apparent effects, but the number of cattle is so small (normally about 15 head) and infrequent (none in the last 10 years) that the actual beneficial effects will be small. The benefits of eliminating the Lazy Daisy Allotment from the DWMA will be greater since that allotment is grazed at light to moderate levels during the tortoise season of use. About 120,000 acres (5%) of existing critical habitat will still be grazed; almost all of this is in the Lazy Daisy Allotment.

The fencing of more than 657 miles of highway and railway will have similar effects as the Preferred/Large DWMA Alternative.

Closing some roads following the criteria noted in section 2.5 will benefit the tortoise through reduced vehicle mortality and illegal collection. The proposed "open" road designations would result in 13 miles per township (36 sections) for the Chemehuevi DWMA and 12 miles for the Chuckwalla DWMA.

A stronger commitment to land acquisition will be primarily a function of funding for purchases and exchanges. Some additional funds will be available from compensation for disturbance of a few natural communities (i.e, Desert Dry Wash Woodland and Chenopod Scrub, Sand Dunes, Playas); however, the low level of disturbance anticipated will produce little compensation funding.

A commitment to the funding of four permanent study plots will ensure that the existing

monitoring program is maintained; additional research benefits are expected to continue based on the data collected on these plots. USGS will continue to execute this program.

Bighorn Sheep

The impacts of the Small DWMA A Alternative on bighorn sheep are similar in nature to the impacts described for the Preferred Alternative with the following exceptions:

Elimination of cattle grazing from the DWMAs will result in a small reduction of almost 27,000 acres in the amount of occupied range that is grazed by cattle (Table 4-22). It will also reduce the amount of movement corridor that is grazed by almost 75,000 acres. Benefits to bighorn sheep are likely to be small because the DWMA covers the lower elevations, which is the portion of the bighorn sheep occupied range used the least.

Table 4-22. Acres and percent of area for three categories of bighorn sheep use in cattle grazing allotments in the NECO Planning Area.

Bighorn sheep use categories	Lazy Daisy Cattle	Chemehuevi Cattle
Occupied Range	100,562 (6)	1,148 (<1)
Unoccupied Former Range		
Movement Corridor	58,608 (10)	33,793 (6)

Other Special Status Animals

The impacts of the Small DWMA A Alternative on special status animals are similar in nature to the impacts described for the Preferred Alternative. Specific differences in impacts between the Preferred Alternative and the Small DWMA A Alternative are described below. Table N-11 Appendix N shows the acres and percent of the range of each special status animal within the smaller proposed DWMAs.

Benefits (e.g., compensation, fencing boundaries, changes in fire management practices, restrictions on vegetation harvesting, designated campsites, land acquisition) of designation of the DWMAs are similar to those described for natural communities. In addition, impacts from the Lazy Daisy and Chemehuevi cattle allotments will be reduced by eliminating grazing. Complete benefits to special status animals from deletion of grazing are not known but the following is a list of potential benefits: increase in plant cover and biomass; increase in the diversity and abundance of lizards and other wildlife species (Busack and Bury 1974, Germano and Hungerford 1981, Germano and others 1983, Germano and Lawhead 1986) and decreased in soil compaction.

The benefit of having no open wash system is more than offset by the reduced DWMA size, the excised portion of the DWMA being the same as the open wash areas.

The fencing of 657 miles of highway, road, and railroad (Table 2-4) would significantly alter the barrier effects of linear transportation corridors. More specifically, passage of most rodents, lizards, small snakes, and tortoises would be greatly reduced. The spacing of gaps (i.e., culverts, bridges) would be critical in the maintenance of minimal gene flow. In some cases, culverts and/or bridges might be added as the fencing is installed during highway or roadway upgrade. Passage of other animals (carnivores, birds, bats, larger snakes) would likely not be affected greatly. The

fencing would significantly reduce the mortality of rodents, lizards, small snakes, and tortoises; however, most of these species, except notably desert tortoise, have a reproductive capacity which can overcome this localized mortality.

As highway roadkills are reduced with fencing, raven populations might decrease to more natural levels, thereby reducing elevated predation levels on desert tortoise. If any program is established, raven removal could assist in further restoring natural populations of desert tortoise and other animals that might receive heavy predation by ravens.

Control of starlings at Corn Spring could aid in the natural reoccupation of native birds such as elf owl and woodpeckers resulting in a more natural insect-bird relationship.

From Issue 3: Management of Special Status Animals and Plants and Natural communities
Desert Tortoise

If and when the Ford Dry Lake and Rice Valley Sheep Allotments are eliminated [for reestablishment of bighorn sheep demes], there will be slight benefit to tortoise populations in those areas, which are outside of proposed tortoise DWMA's. Benefits will be small because these allotments are lightly and infrequently grazed mostly in years of high annual plant abundance.

Bighorn Sheep

Impacts are similar to the Preferred Alternative with the following exception:

Impacts from developing 21 artificial waters sites outside wilderness would be similar to those described in the Preferred Alternative but would be over a smaller area.

Other Special Status Species

Impacts are similar to the Preferred Alternative.

From Issue 4: Wild Horses and Burros

Desert Tortoise

All burro HMA's will be eliminated; removal of burros from the Chocolate/Mule Mountains HMA will eliminate burros on about 31,000 acres of existing critical habitat. There will be no grazing in the newly designated DWMA's. Positive benefits from the elimination of burro grazing in desert tortoise critical habitat are similar to the impacts of reducing cattle grazing, in that reduction in soil compaction, increase in plant cover, reduction in damage to waters and elimination of burrow trampling.

Bighorn Sheep

The proposed elimination of burros from Herd Management Areas will benefit bighorn sheep by reducing habitat damage, especially at water sources and reducing grazing competition.

Other Special Status Species

Elimination of burros from the Herd Management Areas will benefit special status animals by reducing habitat damage, especially in sensitive riparian habitat along the Colorado River and in Desert Dry Wash Woodland, increase forage and cover for wildlife, increase availability of water and allow over-grazed areas to recover. This will help maintain habitat quality, especially for riparian-obligate species such as Gila woodpecker (State-listed), elf owl (State-listed), vermilion flycatcher, and yellow warbler. Table N-7 Appendix N shows the acres and percent of range of

special status animals within current burro HMAs.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Desert Tortoise

The designation of routes of travel in the DWMAs will reduce effects of travel on roads as described for the Preferred Alternative.

Deleting the Johnson Valley to Parker and the Parker 400 race corridors would have a positive benefit to species and habitats by reducing impacts such as vegetation and soil compaction and erosion, widening of existing roads and trails, creation of new roads and trails, and potential for direct mortality and harassment of wildlife.

CUMULATIVE IMPACTS

General Wildlife

The effects on general wildlife will be similar to the Preferred Alternative except for the following.

Two of the DWMAs are smaller, and so associated conservation measures will affect general wildlife over a smaller area; however, the Multi-species WHMA will be increased accordingly.

The Lazy Daisy Allotment will be reduced even more, increasing benefits to general wildlife. Increased highway fencing will potentially provide greater benefits (i.e., reduced runover mortality) if funds can be found for this increased level of fencing. The elimination of horse and burro herd management areas (and horses and burros) will improve habitat conditions for general wildlife, especially migrating songbirds and bats and mammals using watering sites.

Desert Tortoise

The effects on desert tortoise will be similar to the Preferred Alternative except for the following:

Two of the DWMAs are smaller, and so associated tortoise conservation measures will provide benefits over a smaller area. The Lazy Daisy Allotment will be reduced even more than the Preferred Alternative, further reducing trampling of tortoises and burrows and potential competition for forage. Increased highway fencing will further reduce tortoise runover mortality, if funds can be found for this increased level of fencing.

Other Special Status Animals

The effects on other special status species will be similar to the Preferred Alternative except for the following.

The beneficial effects of designation of the DWMAs and the associated conservation measures will be less due to the smaller size of two DWMAs; however, the Multi-species WHMA will be increased accordingly.

The elimination of horse and burro herd management areas (and horses and burros) will improve habitat conditions for special status species that use riparian habitats and natural water sources, such as bighorn sheep, burro deer, and various birds.

Two additional bighorn sheep demes (five total demes) will be reestablished, thereby increasing the viability of the bighorn sheep metapopulation.

The withdrawal from mineral entry of significant bat roosts will provide protection against destruction of some habitat due to mining.

4.3.6 Wilderness Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with Regional Standards, which pertain to soils, riparian and wetland areas, stream function, native species, and water and air quality, and managing grazing activities in accordance with the specified regional guidelines would benefit wilderness resources in the same manner as described for the No Action Alternative (see *Issue 1*, section 4.1.6).

From Issue 2: Recovery of the Desert Tortoise

Elimination of grazing in the Lazy Daisy allotment where it occurs within the Chemehuevi DWMA would likely enhance natural conditions within a portion of the Old Woman Mountains Wilderness. Natural systems would be more likely to freely function absent the grazing of cattle. The same would be true where the Chemehuevi allotment within the Chemehuevi DWMA overlaps the Whipple Mountains Wilderness. In general, management actions that move a wilderness from its existing condition to one of less human influence within legal constraints would benefit wilderness resources.

None of the actions specific to recovery of the desert tortoise as proposed in the NECO Plan under this alternative are anticipated to adversely affect wilderness resources. Where the Chemehuevi and Chuckwalla DWMAs overlap designated wilderness, the effects of actions designed to maintain or enhance tortoise populations as proposed under this alternative would likely benefit wilderness resources to the degree that natural conditions would be preserved, and plant and animal diversity would be protected. Site-specific projects to facilitate recovery of the desert tortoise would require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

The effects of actions in wilderness that maintain or enhance populations of special status animals and plants—including the development of new guzzlers in wilderness to ensure long-term viability of the Sonoran Desert Bighorn Sheep Metapopulation—and preserve or restore natural communities would be the same as those described for the Preferred/Large DWMA Alternative (see *Issue 3*, section 4.2.6).

From Issue 4: Wild Horses and Burros

Managing all herd areas in the NECO Planning Area and in Arizona jurisdiction for zero wild horses and burros would result in no adverse impacts to wilderness resources. Potential impacts to natural conditions if herd levels exceed the established AML would be averted, thereby potentially benefitting wilderness resources.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Whereas motorized vehicles are prohibited in wilderness except as authorized by the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management

plans, the extent to which unacceptable impacts to wilderness resources occur consequent to motorized-vehicle travel is proportional to the manner and degree of *unauthorized* incursions into wilderness areas. Motorized-vehicle access to wilderness boundaries under this alternative would be somewhat reduced within DWMA's relative to the Preferred/Large DWMA Alternative. As opportunities for access to wilderness boundaries are reduced, the potential for unauthorized incursions into wilderness is concomitantly decreased. The extent to which such incursions are anticipated is undetermined.

Under this alternative, competitive off-highway vehicle events would be prohibited throughout the NECO Planning Area except in areas designated "open" to motorized-vehicle use (off-highway vehicle recreation areas). This action would result in no adverse impacts to wilderness resources, and could benefit such resources to the degree that potential straying from approved race courses into designated wilderness, where such courses are located along wilderness boundaries, would be averted.

From Issue 6: Land Ownership Pattern

Effects on wilderness resources consequent to acquisition of in-holdings would be the same as described for the No Action Alternative (*Issue 6*, section 4.1.6).

CUMULATIVE IMPACTS

The cumulative effects of the actions proposed under this alternative would be the same as those described for the Preferred/Large DWMA Alternative.

4.3.7 Livestock Grazing Management

From Issue 1: Standards and Guidelines

Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

From Issue 2: Recovery of the Desert Tortoise

There would be an estimated 37 percent reduction of perennial forage in the Lazy Daisy allotment. An estimated 20 percent of the perennial forage (638 AUMs) would be excluded from the northern portion of the allotment. This reduction of grazing use would leave 2,554 AUMs or 212 cattle for year-long grazing use. No ephemeral use could be authorized. While not as significant as the Preferred Alternative, this is a 22 percent reduction in cattle use. This is a significant and adverse consequence to the lessee. Current terms and conditions would become a condition of the lease.

The Chemehuevi Allotment would be canceled and future livestock production would cease.

Construction of range improvements under this alternative would be more costly, and would have the largest impacts to soils and vegetation of any of the alternatives (Chapter 2, Table 2-7). There are 61.5 miles of fence, 7 cattleguards, 4 water sites, 4 miles of water pipe, 6 water facilities and 3 corrals needed to keep cattle out of the DWMA and improve cattle distribution. These improvements would not be completed during the short-term, and depending upon the funding sources, it would take more than ten years to complete. However, the financial burden is so great under this alternative that implementation may not occur during the long term.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

The result of deleting the Ford Dry Lake and the Rice Valley domestic sheep grazing allotments would be a complete removal of livestock production from these areas. However, the impact to the grazing operators would be negligible because the leases are so infrequently grazed.

CUMULATIVE IMPACTS

When the Lazy Daisy Allotment is retired and the Chemehuevi Allotments canceled, cattle production would be forgone on these Public Lands and opportunities for future grazing use do not exist elsewhere in the Planning Area. The lessee for the Lazy Daisy Allotment would realize a reduction of income and a potential loss of current lifestyle, and the lessee for Chemehuevi Allotment may lose all of the potential area for potential ephemeral grazing use.

Current grazing management within the Ford Dry Lake and Rice Valley Allotments would be affected by the cancellation of the leases. Sheep production would be forgone on these Public Lands and opportunities for future grazing use do not exist elsewhere in the Planning Area. Financial impacts are not known.

4.3.8 Wild Horses and Burro Management

From Issue 1: Standards and Guidelines

Same as the No Action Alternative.

From Issue 2: Recovery of the Desert Tortoise

This action has the most significant negative impacts to the management of burros in which all burros would be removed from the NECO Planning Area including portions along the California side of the Colorado River (see Cumulative Impacts section).

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Direct impacts related to fencing all waters would include: displacement of burros in the area if they aren't removed prior to fencing. If these waters are fenced prior to the burros removal, the burros will be forced to find alternative unfenced water sources in other geographical areas which may establish herds outside the herd areas, or burros may die of dehydration.

From Issue 4: Wild Horses and Burros

Elimination of burros from the HAs would have a significant impact on wild horse and burro management by reducing the number of HMAs with a 0 AML from one to three.

CUMULATIVE IMPACTS

The combination of forces from all issues: physical and biological resource values, other agencies mandates, and the complexities and cost of managing the Wild Horses and Burros (WH&B) program in this particular mix of resources and jurisdictions - would eliminate managing burros from the entire Planning Area. While this would enhance other values, the WH&B program would be diminished on a regional basis (California Desert) to the point of almost total elimination. HAs would remain and HMAs could some day be reestablished if the picture for Public land Health were to support them. It would take several years to remove all animals and potentially impossible to remove them all to absolute zero. Certainly the long-term cost of managing a WH&B and other species (as their management is related to burros) programs along the Colorado River, once burro

removals had been completed, would be eliminated. These include residual, intermittent impacts from burros roaming off HMAs, need for burro exclosures at waters, and some monitoring and research needs.

4.3.9 Recreation Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with Regional Standards and managing grazing activities in accordance with the specified regional guidelines would result in the same effects as discussed under No Action Alternative relative to National Fallback Standards and guidelines (see *Issue 1*, section 4.1.9).

From Issue 2: Recovery of the Desert Tortoise

The discussion under the Preferred/Large DWMA Alternative about routes of travel designations and their impacts to recreational opportunities is applicable to this alternative (see *Issue 2*, section 4.2.9).

This alternative further limits opportunities for stopping, parking, and vehicle camping relative to the No Action Alternative and the Preferred/Large DWMA Alternative. Vehicle camping alongside routes with few restrictions as to location (except as regards distance from a route) has long been a recreational opportunity often unique to public lands. In areas under jurisdiction of the National Park Service, vehicle camping is generally more restrictive. The same is true for many areas in national forests and state parks. In 1994 upon passage of the California Desert Protection Act, opportunities for vehicle camping were adversely affected with designation of wilderness in the California desert; the general public was prohibited from using motorized vehicles in these areas. Actions which further limit vehicle camping to *designated* areas in DWMAAs could substantially affect opportunities for this popular recreational pursuit dependent on the extent of sites or areas identified where vehicle camping is allowed. The fewer sites or areas designated for vehicle camping, the greater the adverse impacts, and vice versa. The NECO Plan does not indicate the number or location of such sites or areas.

Restricting stopping and parking to 30 feet from centerline of an approved route in DWMAAs would minimally affect opportunities for recreation. As a common practice, vehicles generally pull off the road to stop and park no more than the proposed limitation except when a feature of interest might be further away. Where an existing route is available for use, vehicles are usually driven to the site. The 30-foot limitation in DWMAAs would require that individuals walk additional distances where an approved route is *not* available for use.

Limiting the discharge of firearms within DWMAAs to hunting of game between September 1 and March 1 may adversely affect opportunities for target shooting. Target shooting on public lands would be restricted to such lands outside DWMAAs or non-public lands within DWMAAs with landowners' permission, thereby requiring additional travel to pursue this activity in certain circumstances. To the degree that target shooting is an incidental activity pursued in conjunction with other recreational endeavors (e.g., camping and sightseeing), the quality of the recreational experience in DWMAAs may be concomitantly reduced. However, the extent to which target shooting is affected by the proposed restriction is undetermined; the popularity of this activity within the NECO Planning Area has not been established.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Under this alternative, impacts to recreation would be the same as discussed for the Preferred/Large DWMA Alternative (see *Issue 3*, section 4.2.9).

From Issue 4: Wild Horses and Burros

Actions proposed under this alternative are not anticipated to affect opportunities for recreation.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Managing motorized-vehicle access in accordance with MUC guidelines established in the CDCA Plan, as amended, would generally affect opportunities for recreation in the same manner as described under *Issues 2 and 3*, section 4.2.9 (Preferred/Large DWMA Alternative) except within DWMA's. In DWMA's, opportunities for recreation that involve the use of motorized-vehicles would be further constrained as only paved routes, maintained dirt roads, and recreational touring routes would be available for use under this alternative.

Where there occurs the greatest density of routes within DWMA's, it can be expected that impacts to vehicle-dependent recreation would be the greatest; more routes would be closed in these areas than in other areas. For example, the portion of the Chemehuevi DWMA east of Highway 95 contains numerous routes that are not paved or maintained, and are not included in the recreational touring network. The same is true for the area north of National Trails Highway near Essex, the Carson's Well area north of the Turtle Mountains, and various locations in the Chuckwalla DWMA. A greater proportion of routes would be closed in these areas; vehicular recreation would be proportionately affected in an adverse manner. Although access *throughout* the NECO Planning Area could be considered as reasonable under this alternative, opportunities for exploration with a four-wheel drive vehicle would be significantly diminished within DWMA's.

Elimination of the *Parker 400* corridor would result in no adverse impacts to recreational opportunities. It has been a decade since the *Parker 400* event last occurred in California; interest in reestablishing the event on the California loop is no longer being expressed. The *Parker 400* event now occurs entirely in Arizona.

Elimination of the *Johnson Valley to Parker* corridor would adversely affect opportunities for competitive off-highway vehicle events only if interest recently expressed to rekindle the "Checkchase" or similar event is expressed in the form of an application to the BLM for a special recreation permit. It has been more than a decade since the event last occurred in this corridor; interest in sponsoring another event has only recently surfaced.

Restricting competitive off-highway vehicle events to "open areas" (designated off-highway vehicle recreation areas) in conjunction with eliminating the *Johnson Valley to Parker* corridor would diminish opportunities for this form of recreation, but again, only to the degree that interest in sponsoring such events is expressed in the form of an application to the BLM for a special recreation permit. If interest is not sufficiently elevated to that degree, restricting competitive vehicle events to "open areas" would have no adverse impacts to recreational opportunities.

Modification of the "300-foot rule" for stopping, parking, and vehicle camping *outside* DWMA's such that the 300-foot distance is measured from a route's centerline instead of its edge would not substantially affect opportunities for these activities.

From Issue 6: Land Ownership Pattern

Actions proposed under this alternative are not anticipated to affect opportunities for recreation (see discussion for the No Action Alternative: *Issue 6*, section 4.1.9).

CUMULATIVE IMPACTS

Except for further limitations on stopping, parking, and vehicle camping—which would only be further limited relative to the distance from a route’s centerline—the cumulative effects on casual recreation would be the same as described for the Preferred/Large DWMA Alternative. Opportunities for off-highway vehicle racing, on the other hand, would be significantly diminished in the NECO Planning Area with elimination of the *Johnson Valley to Parker* competitive recreation route and the restriction of all such activities to off-highway vehicle recreation areas. The cumulative effect of actions that restrict racing activities is greatest under this alternative. Opportunities for such activities in the NECO Planning Area would be virtually eliminated.

4.3.10 Motor Vehicle Access

From Issue 1: Standards and Guidelines

The effects on motorized-vehicle access consequent to managing ecosystem health in accordance with Regional Standards and managing grazing activities in accordance with the specified regional guidelines would be the same as described for the No Action Alternative relative to National Fallback Standards and guidelines (see *Issue 1*, section 4.1.10).

From Issue 2: Recovery of the Desert Tortoise

Under this alternative, impacts to motorized-vehicle access consequent to actions proposed for the recovery of the desert tortoise would be the same as discussed for the Preferred/Large DWMA Alternative (see *Issue 2*, section 4.2.10).

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Under this alternative, impacts to motorized-vehicle access consequent to actions proposed for the conservation of special status species and natural communities would be the same as discussed for the Preferred/Large DWMA Alternative (see *Issue 3*, section 4.2.10).

From Issue 4: Wild Horses and Burros

Actions proposed under this alternative are not anticipated to affect motorized-vehicle access.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Managing motorized-vehicle access in accordance with MUC guidelines established in the CDCA Plan, as amended, would limit access as described under *Issues 2 and 3*, section 4.2.10 (Preferred/Large DWMA Alternative). In accordance with the Small DWMA “A” Alternative, access would be additionally limited in DWMA’s; the effects of such further limitations on recreation are addressed under *Issue 5*, section 4.3.9 (Recreation Management).

Access for *other* than casual purposes (access related to activities which require specific authorizations) would be addressed through the applicable permitting process. The authorized use of a “closed” route usually limits this use in some manner (e.g., number of trips, season of use, speed limits, accompaniment by a wildlife biologist, etc.) and/or requires mitigation in some form (e.g., restoration of impacts, payment of mitigation fees, etc.). Route designations, which are applicable principally to casual use, would have little to no effect on access for non-casual

purposes.

Manageability:

Manageability of motorized-vehicle activities outside DWMA is the same as described for the Preferred/Large DWMA Alternative (see “*Manageability*,” *Issue 5*, section 4.2.10). Within DWMA, however, manageability under this alternative would likely be more problematic. As increasing numbers of routes are closed to motorized vehicles, especially where densities of routes are greatest, increased incidences of noncompliance with route closures can be expected, especially if the closures are not perceived as being reasonable to accomplish the goals of the plan.

Under this alternative wherein access in DWMA is limited to paved routes, maintained dirt roads, and recreational touring routes, there is no biological basis suggested for these additional closures; the proposal is not made specifically for the recovery of the desert tortoise or conservation of special status species and natural communities. Although it is reasonable to conclude that further prohibitions of motorized vehicles in DWMA *may* benefit such recovery and conservation efforts, it *cannot* be assumed that absent these additional measures the NECO Plan goals would not be achieved. Under these circumstances, manageability of motorized vehicles in DWMA could be less than completely successful.

From Issue 6: Land Ownership Pattern

Under this alternative, impacts to motorized-vehicle access would be the same as discussed for the No Action Alternative (see *Issue 6*, section 4.1.10).

CUMULATIVE IMPACTS

Motorized-vehicle access and opportunities for recreation are closely linked in the California desert. The cumulative effects on motorized-vehicle access under this alternative, therefore, are the same as described in the section entitled “Recreation Management” for the Small DWMA “A” Alternative.

4.3.11 Mineral Management

The following affects are additional or change to affects described in the Preferred/Large DWMA Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

From Issue 1: Standards and Guidelines

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 2: Recovery of the Desert Tortoise

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place, but smaller DWMA would mean that fewer acres would be subject to described affects.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

Access in DWMA's would be considerably more reduced, having a greater affect on casual mining activity and creating more instances of access authorizations.

From Issue 6: Land Ownership Pattern

Extended periods of time may be required to complete acquisition goals as there would be fewer acres in higher priority DWMA's and more acres in lower priority WHMA's.

CUMULATIVE IMPACTS

There is essentially no difference in cumulative impacts from those described under the Preferred/Large DWMA Alternative. The area and effects of DWMA would be less.

4.3.12 Cultural Management

From Issue 1: Standards and Guidelines

Same as the No-Action Alternative except that under that Regional Standards for Public Land Health are applied and the described benefits would extend throughout the planning area.

From Issue 2: Recovery of the Desert Tortoise

The Small DWMA A alternative will designate DWMA's the same as the Preferred. Cumulative new surface disturbance on Federal and State administered lands will be limited to 3 percent of the Federal/State proportion of the DWMA. This action should result in greater protection and preservation of cultural resources within the DWMA boundaries, although not to the extent of the Preferred alternative. All other analysis remains the same as the preferred.

Grazing Management

In the Small DWMA A alternative, current range management practices will continue. Livestock can adversely effect cultural resources, including historic structures, archaeological sites and historic landscapes. The primary impact, however, is damage to artifacts and site integrity resulting from breakage, chipping, horizontal movement, and vertical displacement of artifacts, which generally compromises the information potential about discrete utilization areas of a site. Grazing impacts are greatest in areas where cattle congregate around springs, water courses, troughs, shade zones, and salt licks.

Approximately 140,357 acres of the Lazy Daisy cattle allotment will be eliminated. This will have a positive benefit for cultural resources by reducing the threats from grazing to any recorded sites. Currently there are 45 recorded resources within the existing allotment boundaries (Table 4-9). Only 27 sites would remain within the reduced allotment boundaries in this alternative.

The Chemehuevi Grazing Allotment will be eliminated. Analysis is the same as for the Preferred Alternative.

Management policy will continue to be to analyze effects to cultural resources from grazing during the NEPA review of rangeland lease renewals and would continue in the Small DWMA A alternative. New range improvements will continue to be reviewed under Section 106 at the time they are proposed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Same as Preferred alternative, except that both the Ford Dry Lake and Rice Valley domestic sheep allotments are eliminated. The Rice Valley domestic sheep allotment boundaries will be reduced by 9,264 acres. Both allotments currently encompass 135,247 acres of land. Seven sites are recorded within the Rice Valley allotment and 53 sites are recorded in the Ford Dry Lake allotment (Table 4-9). Elimination of the Ford Dry Lake allotment will remove 49,682 acres from grazing and will eliminate the threat from grazing to the 53 known sites within the allotment. Elimination of the Rice Valley allotment will remove 85,565 acres from grazing and will eliminate the threat from grazing to the seven known sites within the allotment. The elimination or reduction in size of these allotment will have a positive benefit to the protection and preservation of cultural resources that have yet to be recorded.

From Issue 4: Wild Horses and Burros

Analysis is the same as the No-Action alternative. Under the Small DWMA A Alternative, Herd Areas and Herd Management Areas are eliminated. Herd populations will be removed. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific actions that are carried out to meet the standards may satisfy the definition of an “undertaking”, such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

The Preferred alternative would remove 930,906 acres from management for Wild Horse and Burro herds. This would result in a positive benefit to cultural resources by reducing the number of known sites subject to impact from herd behavior by 816 sites (Table 4-10).

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations

General analysis is the same as the No-Action alternative (see Table 4-11), except that in DWMA's the only “open” routes are those already open under specific use authorization including county maintained roads.

Under the Small DWMA A Alternative, 444 cultural resources have been identified as located on BLM managed lands and falling within the 600' APE for routes that are under review for “open” designation outside DWMA's (Table 4-11). Fifty-three sites are located within DWMA's. Of these, 152 sites have either been listed, determined eligible, or are considered likely to be eligible and 129 of these sites are considered to have qualities and values that might be adversely affected by activities authorized within the APE of a route. In this alternative, 109 route segments have been identified as having potential conflicts with cultural resources. These segments will not be designated either “open” or “closed” pending a physical assessment of the sites and evaluation of threat that proximity to an open route might pose. If it is determined that these routes may have or have had an adverse effect on historic properties, BLM will close these routes or will consult with SHPO on the appropriate course of action to resolve the effect.

Competitive Off-Highway Vehicle Events

Analysis remains the same as the No-Action alternative. Under this alternative, all competitive recreation routes would be eliminated. The 18 recorded sites located within the APE for these corridors would no longer be threatened by activities resulting from competitive recreation events.

From Issue 6: Land Ownership Pattern

Same as No-Action Alternative.

From Issue 7: Access to Resources for Economic and Social Needs

Same as No-Action Alternative.

From Issue 8: Incorporation of Wilderness Areas into CDCA Plan

Same as No-Action Alternative.

Cumulative Impacts

In the Small DWMA A alternative, there would be a net indirect benefit to the protection, preservation, and management of cultural resources from the adoption of Regional Standards and Guidelines for rangeland health. There will be a direct benefit to cultural resources by removing the Chemehuevi Range and Lazy Daisy range allotments from grazing, eliminating Herd Management Areas, and limiting cumulative surface disturbance within DWMA's to three percent. There will be further benefit in changing MUC classifications from M to L. Reduction of the authorized use area along routes in DWMA's to 30', will directly benefit cultural resources by reducing threats from off-highway vehicle, camping, and parking along those routes. There will also be a direct benefit to cultural resources by reducing the length and scale of competitive race corridors.

4.3.13 Lands and Land Use Authorization

The following affects are additional or change to affects described in the Preferred/Large DWMA Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

From Issue 1: Standards and Guidelines

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 2: Recovery of the Desert Tortoise

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place, but smaller DWMA's would mean that fewer acres would be subject to described affects.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place, although the area of WHMA's increases to the extent that DWMA area decreases.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

Access in DWMA's would be considerably more reduced, having a greater affect on casual access to private lands and various right-of-way.

From Issue 6: Land Ownership Pattern

There would be no essential change other than it may require a longer period of time to complete acquisition goals in this alternative as there would be fewer acres in higher priority DWMA's and more acres in lower priority WHMA's.

CUMULATIVE IMPACTS

There is essentially no difference in cumulative impacts from those described under the Preferred/Large DWMA Alternative. The area and effects of DWMA would be less.

4.3.14 Socio-economic

From Issue 1: Standards and Guidelines

Impacts would be similar to the No Action Alternative for grazing allotments. Implementation of regional standards may increase costs associated with continued use of the lease.

Impacts to the public and surrounding communities are indirect and are generally minor, both locally and regionally. In the long-term, public lands, which meet standards, are a benefit, both for local communities and for regional tourism.

From Issue 2: Recovery of the Desert Tortoise

Construction of range improvements according to this alternative would be costly, although impacts are not as great as the Small DWMA B Alternative. The proposed range improvements on the Lazy Daisy Allotment include 61.5 miles of fence, seven cattleguards, four water sites, six water facilities with four miles of pipe, and three corrals. The total cost for all of the improvements under this alternative would be \$309,520. It is anticipated that these improvements would be completed during short-term, and depending upon the timing and funding sources, development could take more than ten years. All existing cattleguards would be modified to prevent entrapment of desert tortoises. New cattleguards will be designed to prevent entrapment of desert tortoises.

Cancellation of the Chemehuevi Allotment, loss of a large portion of the Lazy Daisy Allotment, and cancellation of ephemeral grazing use would directly impact livestock production on 272,678 acres. Deleting the Chemehuevi Cattle allotment would have a negative impact on the grazing operator by eliminating the economic benefit from cattle operations. The economic impact appears to be minimal however, because the allotment is ephemeral and is only grazed in years when forage production is greater than 350 pounds-per-acre. The Chemehuevi Cattle allotment hasn't been grazed since 1989. Based on past ephemeral use, impacts to Lazy Daisy Allotment appear minor. The potential voluntarily relinquishment by the lessee of all grazing use in Lazy Daisy Allotment has no effect until activated. After the lessee requests relinquishment, cattle production would cease on 470,207 acres.

Requiring compensation at a 5:1 ratio inside DWMA boundaries could cause an impact to certain permitted uses such as mining, communication site construction and utility construction by increasing the amount of compensation required.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Deleting Rice Valley Sheep allotment would have a negative impact on the grazing operator by eliminating the economic benefit from sheep operations. The economic impact would be minimal

however, because the allotment is ephemeral and is only grazed in years when forage production is greater than 350 pounds-per-acre. The Rice Valley Sheep allotment has been grazed 2 times since 1989.

Expenses incurred by mining operators due to protecting the bat populations that may roost in adits and shafts has yet to be determined. Other issues that may increase operating costs or cause changes to life style patterns are also unknown at this time.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Potential socio-economic impacts to recreation operations are as follows:

1. Restricting stopping, parking and camping to 100 feet will have little impact on the public's access to the Planning Area. No estimation of recreation visitor day numbers are available, therefore the potential socio-economic impacts associated with vehicle camping in these areas is unknown at this time.
2. Designating routes as "open", "closed" or "limited" will not significantly affect traffic patterns. Less than 5% of inventoried routes are proposed for closure and wash-closed zones will have little to no significant socio-economic affect on the human component.
3. Effect of greater number of closed wash systems and roads in DWMA's and deletion of all competitive racing through the Planning Area would have a moderate effect upon recreation opportunities.

From Issue 6: Land Ownership Pattern

In looking at this alternative, there are two categories of land ownership that will potentially have socio-economic impacts. These land adjustments categories relate to public lands that will be in protected zones and private lands that the Federal government would like to exchange or purchase. The least complicated adjustments that would be made between the Agency and the owners are the single owner per section proprietorship, and the 2-5 owners per section proprietorship. Table 4-19 shows changes in the acres of land identified by public and private classifications. These totals reflect the potential change within the management areas. Social well-being concerns that may impact private owners' decision-making related to the proposed adjustments and their willingness to participate in increasing public land ownership are unknown at this time.

Working with the fewest number of owners will significantly reduce the cost to the Agency and create less disruption to the owners in the more densely owned parcels. The land available for adjustment in the eastern section of the Planning Area, closest to the cities of Needles and Blythe, may have the most appeal to some of the private land owners since there are areas of higher population and have the greatest potential for generating revenue from tourism activities. Other public lands outside of the Planning Area may need to be considered for exchange in order to accomplish public land consolidation objectives. These exchanges outside the Planning Area may increase social and economic well-being, and thus, have appeal to other private land owners. Accomplishing acquisition through exchanges is the preferred method, however it is impossible to predict what methods may prevail.

Table 4-23. Proposed Changes to Public and Private Acres

County	Small DWMA A Alternative	
	Private*	Public**
San Bernardino	68,281	1,754,903
Riverside	96,509	1,711,383
Imperial	58,368	605,370

*combined totals of acres privately owned in the 1 and 2-5 density classes. These acreage figures indicated inclusion in proposed exchanges or purchase programs.

**Total Public Lands in Proposed Zones.

CUMULATIVE IMPACTS

Same as for the Preferred Alternative with the following exceptions. The closing of many more miles of routes and all washes on an area basis in DWMAs and all opportunity for competitive vehicle racing represents a significant reduction of casual use access and driving-based recreation opportunities. Closing the Rice grazing allotment and further reducing the Lazy Daisy allotment could be economically difficult for both allotment holders. Tortoise fencing would be dramatically greater than Overall, this alternative is the most restrictive and impacting of the four described.

4.4 Small DWMA B Alternative

4.4.1 Air Quality

From Issue 1: Standards and Guidelines

The same as the No Action Alternative.

From Issue 2: Recovery of the Desert Tortoise

The designation of approximately 1,384,310 acres of Federal land as ACECs would have a slight positive effect on air quality through implementation of specific management prescriptions designed to reduce surface disturbance. The Chemehuevi DWMA (ACEC) reduces the amount of grazing by 176,838 acres and designates routes as open, closed or limited. Although the reduction in surface disturbance is 64% less than the Small DWMA A Alternative, there would be a slight increase vegetative cover on these acres, reducing the volume of PM₁₀ emissions.

Reducing grazing by 39 percent will result in similar positive effects to air quality as the preferred/Large DWMA Alternative.

Limiting surface disturbing activities to 3% versus the 1% in The Preferred/Large DWMA Alternative could impact air quality slightly more by allowing a greater number of surface disturbing activities to occur in the DWMA. These activities could include the removal of vegetation, cover and litter and the disturbance of top soils which increase PM₁₀ emissions. Wildfire suppression efforts would result in reduced particulate (PM₁₀) production and visibility impairment from smoke and wild-blown dust. Short term impacts from suppression potential increase levels of particulates from surface disturbance of fire fighting equipment and operations. However, successful suppression efforts minimize the number of acres impacted as a result of vegetative cover loss.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Same as the Preferred/Large DWMA Alternative.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.4.2 Water Quality

From Issue 1: Standards and Guidelines

The same as the Small DWMA A Alternative .

From Issue 2: Recovery of the Desert Tortoise

Same as the Small DWMA A Alternative with the following exception:

Reduced grazing on 47,682 acres is 30 % less than the Preferred/Large DWMA Alternative and will likely result in an improvement to water quality at springs where cattle had previously caused an amount of degradation.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Designation of a 50% distribution WHMA will have a positive benefit to water quality through the implementation of specific prescriptions aimed at improving habitat condition. Compared to the Preferred/Large DWMA Alternative, the benefit will be less due to the reduced size of the WHMA.

Closure of routes within 1/4 mile of a natural or artificial water source will have a small positive benefit to water quality by reducing soil erosion, soil loss and sedimentation contamination.

Improving vegetative conditions on Natural Communities such as springs and seeps, dunes and plays and microphyll woodland would have a positive benefit to water quality by improving protective ground cover and soil holding capability. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized improving water quality.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.4.3 Soil Quality

From Issue 1: Standards and Guidelines

The same as the Small DWMA A Alternative.

From Issue 2: Recovery of the Desert Tortoise

Impacts to soil quality through implementation of the Small DWMA B Alternative are similar to the Preferred/Large DWMA Alternative with the following exception:

Grazing activities will continue on 369,670 acres which may cause impacts to soil quality primarily through reduction of vegetative and litter cover that protects the soil from erosional processes and, to some degree, soil compaction that channels and concentrates storm water runoff.

Grazing is reduced 61% from the No Action Alternative which will potentially result in improved soil quality on 235,783 acres.

Limiting surface disturbing activities to 3% versus the 1% in The Preferred/Large DWMA Alternative could impact soil quality slightly more by allowing a greater number of surface disturbing activities to occur in the DWMA. These activities could include the removal of vegetation, cover and litter and the disturbance of top soils which increase the erodibility of soils. Soil erosion and loss on the disturbed areas would increase through the dissipation of energy associated with storm water runoff.

CUMULATIVE IMPACTS

Impacts are similar to those discussed under the No Action Alternative.

4.4.4 Vegetation Management

From Issue 1: Standards and Guidelines

General Vegetation: Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

Biological Soil Crusts: Slight improvement may be seen in areas where grazing use has been canceled, otherwise impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

Riparian/Wetland: Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative. Cancellation of the northern and eastern portions of the Lazy Daisy Allotment would positively affect riparian/wetland areas in those areas.

Noxious Weeds: Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

Trends and conditions for vegetation outside allotments would continue as currently observed.

From Issue 2: Recovery of the Desert Tortoise

Natural Communities

Impacts from designation of DWMA's would be the same as in the Small DWMA A Alternative.

Impacts from surface disturbance to natural communities could be higher because the limit on cumulative new surface disturbance is 3%. Although disturbance is not expected to exceed 1 percent over the next 30 years, the higher value could allow for more projects to be developed in DWMA's whereas the lower 1% limit may deter projects due to concern over reaching the limit.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Special Status Plants

The impacts described for the Small DWMA A generally apply except that with the total Conservation Zone being smaller, the inclusion of these plants is somewhat less.

From Issue 4: Wild Horses and Burros

Same as the Preferred Alternative.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Benefits and impacts related to LTVAs is the same as for the No Action Alternative.

Potential impacts due to competitive racing are generally the same as for the No Action Alternative with the exception of the elimination of the Parker 400 route.

Impacts from the pattern of road designations would be about the same as for the Preferred Action with two exceptions: fewer “open” roads in DWMA s will benefit plant communities and special status plant species; a slightly greater number of “open” roads outside DWMA s would add corresponding additional impact.

CUMULATIVE IMPACTS

General Vegetation

Effects on general vegetation will be similar to the Small DWMA A Alternative except that the establishment of the Piute HMA will result impacts associated with burro grazing and trampling, especially near watering sites.

Special Status Plants

Effects on special status plants will be similar to those described for the Small DWMA A Alternative except as described for general vegetation.

Biological Crusts

Effects on special status plants will be similar to those described for the Small DWMA A Alternative except as described for general vegetation.

Riparian/Wetland

Effects on special status plants will be similar to those described for the Small DWMA A Alternative except as described for general vegetation.

Noxious Weeds

Effects on special status plants will be similar to those described for the Small DWMA A Alternative.

4.4.5 Wildlife Management

From Issue 1: Standards and Guidelines

Same as the Preferred Alternative.

From Issue 2: Recovery of the Desert Tortoise

Desert Tortoise

The effects resulting from the Small DWMA B Alternative on desert tortoise are similar in nature to the impacts described in the Preferred DWMA Alternative with the following exceptions:

Existing HMPs and ACECs will be incorporated into the DWMA s rather than deleting them. It is not likely there will be any positive or negative impacts from this action.

Cumulative new surface disturbance will be limited to three percent versus one percent in the Preferred/Large DWMA Alternative which could result in a higher level of new surface disturbance and reduced incentive for project rehabilitation.

Grazing will continue on both cattle grazing allotments but will be reduced in the Lazy Daisy by 11,606 acres and by 38,707 acres on the Chemehuevi allotment. In areas excised from the allotments positive direct impacts could include a reduction in grazing pressure, increased cover and biomass (J.E. Lovich and D. Bainbridge 1999) and improved soil conditions.

The effects of road closures in DWMA's is the same as for the Small DWMA A Alternative.

Only 26 miles of fencing along Interstate 10 and 40 and Highway 95 are proposed. This is only nine percent of the amount proposed in the Small DWMA A Alternative and only 28 percent of that proposed in the Preferred/Large DWMA Alternative. However, the 58 miles is in the highest tortoise density along the busiest highways. Thus, these highways are considered the most severe as functional barriers to tortoise movements. The Interstate Highways significantly fragment tortoise populations. High roadkills on these wide, busy highways presumably provide a considerable food supplement for ravens. Direct positive impacts to desert tortoise from fencing these roads would include reduced number of deaths from vehicles and an increase in the density of desert tortoise on either side of the fenced road (Boarman et al. 1992).

Non-lethal control of ravens (mitigation, sanitation, etc) will greatly help in the control and proliferation of ravens, but there is still the potential that a few ravens will be dramatically selective on juvenile tortoises. Limiting the removal of such ravens through non-lethal means, only, will be costly and largely ineffective.

Bighorn Sheep

Impacts from Tortoise Recovery Issue is similar in nature to the impacts described in the Preferred/Large DWMA Alternative. Those differences are described below.

The limit on cumulative new surface disturbance is three percent versus one percent in the Preferred/Large DWMA Alternative which could result in increased surface disturbance.

Eliminating portions of the Lazy Daisy and Chemehuevi Cattle Allotments will result in very little direct or indirect impact to bighorn sheep because the area being excised is in the lower elevations.

Other Special Status Species

Continuing grazing on reduced portions of the Lazy Daisy and Chemehuevi Allotments with various restrictions could enhance the condition of existing forage and improve quality of habitat. Special status animals would benefit from a reduction in grazing pressure, increased cover and improved habitat conditions in those areas closed to livestock grazing.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Bighorn Sheep

Augmenting natural and existing artificial waters with only a total of 22 new artificial waters would likely fall short of significantly increasing bighorn sheep over current levels. Conversely, proximity changes in relative numbers of native species from such waters would be considerably reduced.

From Issue 4: Wild Horses and Burros

Impacts are similar in nature to those described for the Preferred Alternative with the following exception:

Establishing the Piute Mountain HMA could cause additional impacts to desert tortoise where burro grazing occurs within the HMA. The HMA is inside the DWMA and there may be additional impacts to desert tortoise from burrow trampling, competition for forage and degradation to habitat through reduced biomass and plant cover.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

The impacts are similar in nature to those described for the Preferred Alternative with the following exception:

Stopping, parking and camping will increase from 100 feet in the Preferred/Large DWMA Alternative to 300 feet in this alternative. This may increase impacts to habitat and species in areas where increased surface disturbance occurs.

CUMULATIVE IMPACTS

General Wildlife

The effects on general wildlife will be similar to the Small DWMA A Alternative except for the following.

The Multi-species WHMA is smaller, and so associated conservation measures will affect general wildlife over a smaller area.

The commitment to limit cumulative new surface disturbance in DWMA's will be only 3 percent rather than 1 percent. Therefore, potentially more wildlife habitat in DWMA's may be disturbed. The Chemehuevi Allotment will be reduced in size, but not eliminated entirely. However, grazing intensity is extremely light and only occasional. Highway fencing will be considerably less, resulting in smaller reductions in wildlife mortality. Camping and Parking will be 300 feet as in the No Action Alternative.

Burro HMA's will be established with specific AMLs. Impacts on general wildlife will be greatest where burros drift out of these HMA's or when numbers exceed carrying capacity prior to removal. The Piute Mountain HMA will be new and will negatively affect general wildlife in that area.

Desert Tortoise

The effects on desert tortoise will be similar to the Small DWMA A Alternative except for the following.

The Chemehuevi Allotment will be eliminated only in the highest density tortoise habitat; however, grazing intensity is very light in this allotment. Highway fencing will be installed only along Interstate Highway 10 and 40 and Highway 95. This will give the least reduction in desert tortoise mortality. The Piute Mountain HMA for burros will be located in a DWMA.

Other Special Status Animals

The effects on other special status species will be similar to the Small DWMA A Alternative except for the following.

The Multi-species WHMA is smaller, and so some associated conservation measures will affect special status species over a smaller area.

Only 21 new water artificial watering sites for bighorn sheep or deer will be developed. This will provide limited expansion of usable range for existing bighorn sheep demes. Four bighorn sheep demes will be reestablished.

Burro HMAs will be maintained in the range of several special status animals, most importantly bighorn sheep and burro deer. Impacts will be greatest where burros drift out of the HMA or when numbers exceed carrying capacity prior to removal. The Piute Mountain HMA would be new; burros that drift into the nearby Old Woman Mountains could affect bighorn sheep there.

CUMULATIVE IMPACTS

Cumulative impacts are similar to those discussed under the Preferred Alternative.

4.4.6 Wilderness Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with Regional Standards, which pertain to soils, riparian and wetland areas, stream function, native species, and water and air quality, and managing grazing activities in accordance with the specified regional guidelines would benefit wilderness resources in the same manner as described for the No Action Alternative (see *Issue 1*, section 4.1.6).

From Issue 2: Recovery of the Desert Tortoise

None of the actions specific to recovery of the desert tortoise as proposed in the NECO Plan under this alternative are anticipated to adversely affect wilderness resources. Where the Chemehuevi and Chuckwalla DWMAs overlap designated wilderness, the effects of actions designed to maintain or enhance tortoise populations as proposed under this alternative would likely benefit wilderness resources to the degree that natural conditions would be preserved, and plant and animal diversity would be protected. Site-specific projects to facilitate recovery of the desert tortoise would require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed.

If a lessee voluntarily relinquishes all grazing use authorizations and no other grazing authorizations are approved for the Lazy Daisy and Chemehuevi Allotments, the effects would be the same as those described for the Preferred/Large DWMA Alternative (see *Issue 2*, section 4.2.6).

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

The effects of actions in wilderness that maintain or enhance populations of special status animals and plants and preserve or restore natural communities would be the same as those described for the Preferred/Large DWMA Alternative (see *Issue 3*, section 4.2.6), *except* relative to the development of new guzzlers in wilderness to ensure long-term viability of the Sonoran Desert Bighorn Sheep Metapopulation. Under this alternative, it is proposed that all new water developments to expand usable habitat in the Sonoran Desert Bighorn Sheep Metapopulation

WHMA be constructed outside wilderness. The natural character of the wilderness landscape would therefore not be affected, and opportunities for solitude or a primitive and unconfined type of recreation would not be constrained by the project. However, to the extent that the metapopulation of bighorn sheep would be diminished in wilderness areas by lack of water developments, a concomitant diminishing of the area's value for wildlife would occur.

From Issue 4: Wild Horses and Burros

Combining the Chemehuevi and Havasu HAs and HMAs into one HA and HMA would integrate substantially larger portions of the Chemehuevi Mountains and Whipple Mountains Wildernesses into an area managed for retention of burros than under current management. Combining the Picacho, Chocolate/Mule Mountains HA, historic burro range, and Cibola/Trigo HA and HMAs into one HA and HMA would integrate substantially larger portions of the Indian Pass, Picacho Peak, and Little Picacho Peak Wildernesses into an area managed for retention of burros than under current management. Most of the Palo Verde Mountains Wilderness occurs within the existing and proposed HMA. The Piute Mountain HMA would incorporate most of the Piute Mountains Wilderness. As wild horses and burros are considered an integral part of the natural system of the public lands in areas where found, impacts to the natural conditions of these wilderness areas are acceptable if herd numbers are managed in accordance with the established AML and approved management plans.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Whereas motorized vehicles are prohibited in wilderness except as authorized by the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans, the extent to which unacceptable impacts to wilderness resources occur consequent to motorized-vehicle travel is proportional to the manner and degree of *unauthorized* incursions into wilderness areas. Motorized-vehicle access to wilderness boundaries within DWMA's and concomitant impacts to wilderness resources consequent to such access would be the same as described for the Small DWMA "A" Alternative (see *Issue 5*, section 4.3.6). Outside DWMA's, access to wilderness boundaries would be somewhat increased with use being allowed on "redundant" routes. As opportunities for access to wilderness boundaries are increased, the potential for unauthorized incursions into wilderness is concomitantly greater. The extent to which such incursions are anticipated is undetermined.

Relative to competitive off-highway vehicle events, the effects would be the same as described under the Preferred/Large DWMA Alternative (see *Issue 5*, section 4.2.6).

From Issue 6: Land Ownership Pattern

Effects on wilderness resources consequent to acquisition of inholdings would be the same as described under the No Action Alternative (see *Issue 6*, section 4.1.6).

CUMULATIVE IMPACTS

No new impacts to wilderness resources are anticipated from actions proposed under this alternative. It is expected that visitation to wilderness areas in the NECO Planning Area will remain low. The cumulative effects, therefore, are consistent with those described for the No Action Alternative.

4.4.7 Livestock Grazing Management

From Issue 1: Standards and Guidelines

Impacts associated with adoption of the regional standards and guidelines are similar to the No Action Alternative.

From Issue 2: Recovery of the Desert Tortoise

There would be an estimated 37 percent reduction of perennial forage in the Lazy Daisy allotment. A 37 percent reduction subtracted from an estimated 1,915 AUMs available for grazing use in the DWMA would reduce grazing use by 709 AUMs. This reduction of grazing use in the DWMA would leave 2,483 AUMs or 207 cattle for year-long grazing use. This is a 22 percent reduction in cattle use. This is a significant and adverse consequence to the lessee.

The Chemehuevi allotment is reduced by 27 percent of ephemeral forage, which reduces the AUM by (*). A grazing strategy could directly affect year-long grazing operations about four out of ten years.

Construction of range improvements following this alternative would be the least costly of all alternatives. There are several proposed range improvements for the Lazy Daisy Allotment consisting of 5½ miles of fence, one cattleguard, four water sites, six water facilities with four miles of pipe, and three corrals. The total cost for all of the improvements under this alternative would be \$62,960. These improvements would mostly be completed during short-term. All existing and new cattleguards would be modified and built to prevent entrapment of desert tortoises.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Impacts are the same as the Preferred Alternative.

4.4.8 Wild Horses and Burro Management

From Issue 1: Standards and Guidelines

Same as the Preferred/Large DWMA Alternative except that the area of management complexity and potential impacts to burros is greater.

From Issue 2: Recovery of the Desert Tortoise

Same as the Preferred/Large DWMA Alternative except that 1) a portion of the Chemehuevi grazing allotment would remain and periodic competition between cattle and burros would continue, and 2) long-term impacts to the Piute Mountain HMA could occur as a result of monitoring.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

The size of the Chemehuevi HMA is 54% of original (i.e., in the No Action Alternative), while the AML is unchanged. Both the size of the Chocolate/Mule Mountain HMA and its AML are 65% of original.

As in the Preferred/Large DWMA Alternative, removal of HMA designation from national wildlife refuges (NWRs) managed by USFWS and from Picacho State Recreation Area (SRA) and

from other areas with species/habitat values (including tortoise) greatly enhances these entities to meet their management mandates and reduce impacts to valuable habitats and facilities. However, the complexity of mixed agencies and mandates is more complex and difficult with additional HMAs alongside the Havasu NWR and private fields in the irrigated Palo Verde Valley. Other effects described in the Preferred/Large DWMA Alternative also apply the following exceptions:

1. Competition with bighorn sheep demes would increase for the Palo Verde Mountains, but decrease in the Cargo Muchahco Mountains areas.
2. Management costs (e.g., facilities, monitoring) and residual impacts would be greater with the increased size of HMAs

From Issue 4: Wild Horses and Burros

HMA and animal numbers reductions relative to the No Action Alternative are noted above. Elimination of the Picacho horse HMA would have no significance since any horses that may have once been in the area naturally left many years ago. Other effects are the same as described in the Preferred/Large DWMA Alternative with the following exceptions:

- Management costs (e.g., facilities, monitoring) and residual impacts would be greater with the increased size of HMAs
- A Piute HMA is established reversing to a small extent the regional decline of burro HMAs. 50 animals is considered the minimum level for genetic viability. With the proposed herd set initially at 37, maintaining its genetic viability may require periodic management support (outside introductions).

CUMULATIVE IMPACTS

Cumulative impact to burros would include information described in the No Action Alternative, however the boundaries of the Chocolate/Mule Mountains and the Chemehuevi HMAs change to reflect the recommendations of the Pierson Report and the Piute Mountain HMA is established. All three HMAs will be managed for wild burros which will allow an increased representation of this species in the California Desert Conservation Area. The Piute Mountain HMA overlaps critical tortoise habitat which will be subject to biological evaluations, assessments, and opinions regarding the recovery of the desert tortoise. Regional rangeland standards would be incorporated into the HMAPs.

4.4.9 Recreation Management

From Issue 1: Standards and Guidelines

Managing ecosystem health in accordance with Regional Standards and managing grazing activities in accordance with the specified regional guidelines would result in the same effects as discussed for the No Action Alternative relative to National Fallback Standards and guidelines (see *Issue 1*, section 4.1.9).

From Issue 2: Recovery of the Desert Tortoise

The discussion for the Preferred/Large DWMA Alternative about routes of travel designations and their impacts to recreational opportunities is applicable to this alternative (see *Issue 2*, section 4.2.9).

Limiting stopping, parking, and vehicle camping to within 300 feet of route centerline in DWMAs enhances opportunities for these activities. Currently, stopping, parking, and vehicle camping is allowed within 300 feet of routes, *except* in sensitive areas such as ACECs where the 1980 CDCA

Plan limit of 100 feet applies. Where DWMA's are coincident with ACECs, the increased allowance would facilitate camping by larger groups in particular (see discussion for the No Action Alternative [*Issue 2*, section 4.1.9] about the impacts of smaller camping zones).

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Under this alternative, impacts to recreation would be the same as discussed for the Preferred/Large DWMA Alternative (see *Issue 3*, section 4.2.9).

From Issue 4: Wild Horses and Burros

Actions proposed under this alternative are not anticipated to affect opportunities for recreation.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Managing motorized-vehicle access in accordance with MUC guidelines established in the CDCA Plan, as amended, would generally affect opportunities for recreation in the same manner as described under *Issues 2 and 3*, section 4.2.9 (Preferred/Large DWMA Alternative), *except* within DWMA's where impacts to recreation would be the same as described under *Issue 5*, section 4.3.9 (Small DWMA "A" Alternative).

Allowing motorized-vehicle use of "redundant" routes outside DWMA's would not affect opportunities for recreation to any appreciable degree, whether in a beneficial or adverse manner. By definition, a redundant route is one deemed *more than is necessary*, whose purpose is apparently the same or very similar to that of another route, inclusive of providing the same or very similar recreational opportunities or experiences. Therefore, it can be anticipated that use of such routes would occur infrequently as routes that provide the same recreational opportunities would already be available for use.

Elimination of the *Parker 400* corridor would result in no adverse impacts to recreational opportunities. It has been a decade since the *Parker 400* event last occurred in California; interest in reestablishing the event on the California loop is no longer being expressed. The *Parker 400* event now occurs entirely in Arizona.

The limitations under this alternative are slightly less restrictive than those under the Preferred/Large DWMA Alternative for organized competitive vehicle events within the *Johnson Valley to Parker* corridor and in accordance with MUC guidelines outside the corridor. Impacts to recreational opportunities would therefore be essentially the same as described for the Preferred/Large DWMA Alternative (see *Issue 5*, section 4.2.9).

Modification of the "300-foot rule" for stopping, parking, and vehicle camping outside DWMA's such that the 300-foot distance is measured from a route's centerline instead of its edge would not substantially affect opportunities for these activities.

From Issue 6: Land Ownership Pattern

Actions proposed under this alternative are not anticipated to affect opportunities for recreation (see discussion for the No Action Alternative: *Issue 6*, section 4.1.9).

CUMULATIVE IMPACTS

Cumulative effects on recreation would generally be the same as those described for the Preferred/Large DWMA Alternative. Opportunities for stopping, parking, and vehicle camping

are increased with establishment of the “300-foot rule” in DWMA’s, and the number of participants allowed in off-highway vehicle races is increased, but these changes are not considered substantial.

4.4.10 Motor Vehicle Access

From Issue 1: Standards and Guidelines

The effects on motorized-vehicle access consequent to managing ecosystem health in accordance with Regional Standards and managing grazing activities in accordance with the specified regional guidelines would be the same as described for the No Action Alternative relative to National Fallback Standards and guidelines (see *Issue 1*, section 4.1.10).

From Issue 2: Recovery of the Desert Tortoise

Under this alternative, impacts to motorized-vehicle access would be the same as discussed for the Preferred/Large DWMA Alternative (see *Issue 2*, section 4.2.10).

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Under this alternative, impacts to motorized-vehicle access would be the same as discussed for the Preferred/Large DWMA Alternative (see *Issue 3*, section 4.2.10).

From Issue 4: Wild Horses and Burros

Actions proposed under this alternative are not anticipated to affect motorized-vehicle access.

From Issue 5: Motorized-Vehicle Access/Routes of Travel Designations/Recreation

Under this alternative, impacts to motorized-vehicle access would be the same as discussed for the Small DWMA “A” Alternative (see *Issue 5*, section 4.3.10).

From Issue 6: Land Ownership Pattern

Under this alternative, impacts to motorized-vehicle access would be the same as discussed for the No Action Alternative (see *Issue 6*, section 4.1.10).

CUMULATIVE IMPACTS

Motorized-vehicle access and opportunities for recreation are closely linked in the California desert. The cumulative effects on motorized-vehicle access under this alternative, therefore, are the same as described in the section entitled “Recreation Management” for the Small DWMA “B” Alternative.

4.4.11 Mineral Management

The following affects are additional or change to affects described in the Small DWMA A Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

From Issue 1: Standards and Guidelines

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 2: Recovery of the Desert Tortoise

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities

Fewer acres would be There would be less additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

Access in DWMA's would be considerably more reduced, having a greater affect on casual mining activity and creating more instances of access authorizations; however, outside DWMA's access network would increase to nearly the extent of the No Action Alternative and reduce the need for access authorizations.

From Issue 6: Land Ownership Pattern

There would be no essential change from the Preferred Alternative except that acquisitions/ownership consolidations would cover less area (50% conservation zone goal).

CUMULATIVE IMPACTS

Mining operations would be less effected by the (reduced acres) DWMA and WHMA designations.

4.4.12 Cultural Management

From Issue 1: Standards and Guidelines

Same as the No-Action Alternative except that under that Regional Standards for Public Land Health are applied and the described benefits would extend throughout the planning area.

From Issue 2: Recovery of the Desert Tortoise

The Small DWMA A alternative will designate DWMA's the same as the Preferred. Cumulative new surface disturbance on Federal and State administered lands will be limited to 3 percent of the Federal/State proportion of the DWMA. This action should result in greater protection and preservation of cultural resources within the DWMA boundaries, although not to the extent of the Preferred alternative. All other analysis remains the same as the Preferred alternative.

Grazing Management

In the Small DWMA B alternative, current range management practices will continue. Livestock can adversely effect cultural resources, including historic structures, archaeological sites and historic landscapes. The primary impact, however, is damage to artifacts and site integrity resulting from breakage, chipping, horizontal movement, and vertical displacement of artifacts, which generally compromises the information potential about discrete utilization areas of a site. Grazing impacts are greatest in areas where cattle congregate around springs, water courses, troughs, shade zones, and salt licks.

Approximately 140,357 acres of the Lazy Daisy cattle allotment will be eliminated. The analysis is the same as the Small DWMA A alternative.

The Chemehuevi Grazing Allotment will be reduced by 36,480 acres. This will have a positive benefit for cultural resources by reducing the threats from grazing to recorded and unrecorded sites. Currently there are 55 recorded resources within the existing allotment boundary (Table 4-9). Only 30 sites would remain within the reduced allotment boundaries in this alternative.

Management policy will continue to be to analyze effects to cultural resources from grazing during the NEPA review of rangeland lease renewals and would continue in the Small DWMA B alternative. New range improvements will continue to be reviewed under Section 106 at the time they are proposed.

From Issue 3: Management of Special Status Animals and Plants and Natural Communities
Same as Preferred Alternative.

From Issue 4: Wild Horses and Burros

Analysis is the same as the No-Action alternative. Under the Small DWMA B Alternative, Herd Areas and Herd Management Areas are combined and reduced in size to 537,830 acres and the Piute Mountain HMA is established at 39,780 acres. Herd populations will be managed at existing levels. There are no specific on-the-ground actions proposed in this plan for this alternative. Specific actions that are carried out to meet the standards may satisfy the definition of an “undertaking”, such as placement of protective exclosures, water troughs, gathering traps, or other ground disturbing activities, and may have the potential to affect historic properties. Those actions will be reviewed in accordance with Section 106 of the NHPA during the course of normal NEPA review at the time they are proposed.

The Preferred alternative would remove 498,050 acres from management for Wild Horse and Burro herds. This would result in a positive benefit to cultural resources by reducing the number of known sites subject to impact from herd behavior by 413 sites. There are 402 recorded cultural resources identified within the boundaries of the HMAs for this alternative (Table 4-10).

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations

Analysis is the same as the No-Action alternative (see Table 4-11), and is the same situation inside DWMA B as for the Small DWMA B Alternative.

Under the Small DWMA B Alternative, 554 cultural resources have been identified as located on BLM managed lands and falling within the 600' APE for routes that are under review for “open” designation inside and outside DWMA B (Table 4-11). Of these, 184 sites have either been listed, determined eligible, or are considered likely to be eligible and 167 of these sites are considered to have qualities and values that might be adversely affected by activities authorized within the APE of a route. In this alternative, 284 route segments have been identified as having potential conflicts with cultural resources. These segments will not be designated either “open” or “closed” pending a physical assessment of the sites and evaluation of threat that proximity to an open route might pose. If it is determined that these routes may have or have had an adverse effect on historic properties, BLM will close these routes or will consult with SHPO on the appropriate course of action to resolve the effect.

Competitive Off-Highway Vehicle Events

Analysis and impacts are the same as the Preferred alternative.

From Issue 6: Land Ownership Pattern

Same as No-Action Alternative.

From Issue 7: Access to Resources for Economic and Social Needs

Same as No-Action Alternative.

From Issue 8: Incorporation of Wilderness Areas into CDCA Plan

Same as No-Action Alternative.

Cumulative Impacts

In the Small DWMA B alternative, there would be a net indirect benefit to the protection, preservation, and management of cultural resources from the adoption of Regional Standards and Guidelines for rangeland health. There will be a direct benefit to cultural resources by reducing the area of the Lazy Daisy and Chemehuevi range allotments, as well as the size of Herd Management Areas. There will be further benefit in changing MUC classifications from M to L, as well as limiting cumulative surface disturbance within DWMA's to three percent. There will also be a direct benefit to cultural resources by reducing the length and scale of competitive race corridors.

4.4.13 Lands and Land Use Authorization

The following affects are additional or change to affects described in the Small DWMA A Alternative. No attempt is made to quantify the number people, companies or operations affected by the following.

From Issue 1: Standards and Guidelines

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place.

From Issue 2: Recovery of the Desert Tortoise

There would be no additional mitigation, compensation, and reclamation requirements and costs to those already in place. A 3% surface disturbance limit would result in fewer negative discretionary decisions for Lands actions requests over time or that the threshold would actually be reached.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

Fewer acres would be included in WHMA's so there would be less additional mitigation, compensation, and reclamation requirements implications.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

While access in DWMA's would be considerably more reduced, the access network outside DWMA's would be increased to nearly the same network as in the No Action Alternative. This could possibly reduce the need for access authorizations to private lands.

From Issue 6: Land Ownership Pattern

There would be no essential change except that the acquisitions/ownership consolidations target area is reduced (50% conservation zone goal) as shown on Table 4-23.

CUMULATIVE IMPACTS

Cumulative impacts would be little changed, except for the 3% surface disturbance threshold in DWMA's and fewer acres of WHMA's.

4.4.14 Socio-Economic

From Issue 1: Standards and Guidelines

Impacts would be similar to the No Action Alternative for grazing allotments. Implementation of regional standards may increase costs associated with continued use of the lease and addition and maintenance of range improvements.

Impacts to the public and surrounding communities are indirect and are generally minor, both locally and regionally. In the long-term, public lands, which meet standards, is a benefit, both for local communities and for regional tourism.

From Issue 2: Recovery of the Desert Tortoise

Reducing the Lazy Daisy allotment by 42% causes a 20 percent loss in grazing use (266 cattle to 213). This is a significant and adverse loss of revenue to the lessee. There would be a substantial short-term and long-term loss of management flexibility with cattle operation with so much area excluded from future use.

Reducing the Chemehuevi allotment by 37 percent would not be a loss of perennial AUMs because this is an ephemeral allotment, there would be substantial impact to management flexibility. The consequence of this reduction would make the grazing season so short and cattle numbers so low that economic benefits would be marginal.

Construction of range improvements according to this alternative would be the least costly of all alternatives. Range improvements are not proposed for Rice Valley Allotment. There are many proposed range improvements for the Lazy Daisy Allotment consisting of 5½ miles of fence, one cattleguard, four water sites, six water facilities with four miles of pipe, and three corrals. The total cost for all of the improvements under this alternative would be \$62,960. These improvements would primarily be completed during short-term. All existing and new cattleguards would be modified or built to prevent entrapment of desert tortoises.

The proposed tortoise fencing is several magnitudes less than in either the Preferred or Small DWMA A alternatives. With only a 3% limit on surface disturbance more disturbance could occur and with emphasis on effective rehabilitation. The magnitude and effects of routes of travel designations in DWMA's is about the same as in the Small DWMA A Alternative.

From Issue 3: Management of Special Status Animals and Plants and Natural communities

The cost of compensation and mitigation for other species would be less in the alternative because the amount of multi-species WHMA is less. Only Ford Dry Lake Grazing lease is completely eliminated.

From Issue 5: Motorized Vehicle Access/Routes of Travel Designations/Recreation

Fewer routes would be closed and there is a greater opportunity for competitive racing.

From Issue 6: Land Ownership Pattern

Same as Small DWMA A but fewer acres to acquire.

CUMULATIVE IMPACTS

Overall this alternative carries the least social and economic costs of all alternatives. Mitigation, compensation, disturbance limits, highway fencing, grazing allotments reduction, routes/race routes closed (acres and amounts) are all fewer. On the matter of highway fencing the cost is several magnitudes less.